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Ornamentals for Southwest Texas

TEXAS AGRICULTURAL EXPERIMENT STATION
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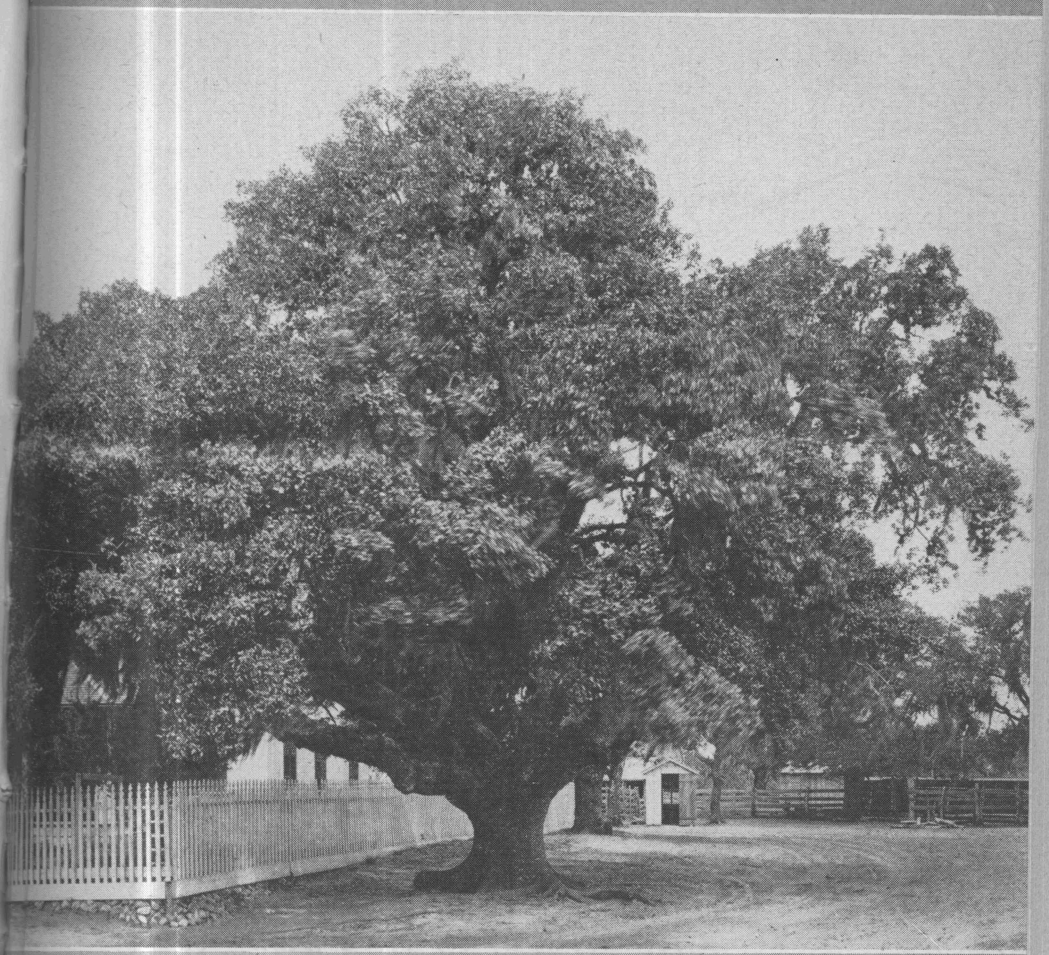

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS
GIBB GILCHRIST, President

Figure 2. The carob tree *(Ceratonia siliqua)* is sensitive to root rot but may be grown near irrigation ditches.

Preface

This publication summarizes 16 years of tests and observations on ornamentals for Southwest Texas at the Winter Garden station (Substation No. 19) at Winter Haven in Dimmit county.

Tabular notes include height, spread, rate of growth, resistance to root-rot and to cold and sun, method of propagation, and uses of shade trees, evergreen and flowering shrubs, vines, bulbs, herbaceous flowers and lawn grasses.

Species especially recommended are:

Evergreen shade trees: live oak, eucalyptus, huisache, and palms.

Deciduous shade trees: hackberry or palo blanco, mesquite, non-fruiting mulberry, Spanish oak, pecan, sycamore, and walnut.

Evergreen shrubs: agarita, Apache plume, arbor-vitae, bamboo, brazil, calamondin, ceniza, firethorn, Roman myrtle, oleander, palms, and Chinese teaplant.

Flowering shrubs: crepe myrtle, golden shower, trailing lantana, dwarf peach, dwarf pomegranate, roses and flowering willow.

Vines: Bougainvillea, grapes, kudzu, queen's wreath, and climbing roses.

Bulbs: gladiolus, dahlia, angel lily, canna, tuberose, and bearded iris.

Lawns: St. Augustine grass.

Herbaceous flowers grown from seed that are especially recommended for general planting:

Spring planting: (February-March) petunia, coxcomb, zinnia, balsam, chrysanthemum (plants), cosmos, California poppy, four o'clock, morning glory; portulaca, periwinkle.

Fall planting: (September-January) carnation, sweet william, pinks, aster, snapdragon, calendula, sweet pea, hollyhock, larkspur, marigold, phlox drummondii, pansy, verbena, Shasta daisy, nasturtium, blue bonnet, candytuft, chrysanthemum (seed).

On the front cover is shown a native live oak tree, the most useful evergreen tree in South or Southwest Texas.. This picture (Figure 1) is used through the courtesy of the USDA Extension Service and Sadie Hatfield.

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Ornamentals for Southwest Texas

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Many requests are received at the Winter Garden station for information on ornamentals adapted to the Southwest Texas climate. These indicate a healthy interest in dressing-up the home. A well kept and well-landscaped home is an indication of permanency, while bare, shadeless yards and unpainted houses give an impression of lack of permanency. (Figures 29, 30, 31).

Efficiency of the individual depends not only upon his skill, but also on his mental attitude. The latter in turn is influenced by environment, such as living conditions, climate, and surroundings. In Southwest Texas, with frequent high summer temperatures and intense sunlight, the surroundings should not only be pleasing to look at, but should also furnish plenty of shade for comfort. The denser the shade the better, but partial shade is better than none.

Other considerations in landscaping are: screens or hedges to hide unsightly features such as a laundry yard; background and foundation plantings to frame the house or lawn; windbreaks to protect from northers, and borders to outline the plantings.

In order to help the householder in selecting plant materials for landscaping, a list of plants for these various classifications is given. Plants marked (N) are native and may be found wild in Southwest Texas within a radius of 100 miles of the Winter Garden station.

A few of the possible choices of trees and shrubs for the Southwest Texas area are listed together with a few notes on climatic and soil limitations, uses, height, spread, and propagation. This should not be considered a complete list but merely some of the possibilities. Both common and scientific names are given. The latter consists of the genus name, followed by the name of the species (1).

Climatic Limitations

The Winter Garden section is located in an area where trees and shrubs must be both heat and cold-resistant. Although temperatures seldom go below 20° F., shade trees or other ornamentals are not easily replaced if they are frozen after reaching a useful size. Hence,

a choice of hardy species is important. Many of our commonly grown trees and shrubs of the more humid regions fail here because of hot, dry summers. Also some very desirable tropical plants are unable to stand the occasional freezes. In addition some ornamentals are not adapted to so mild a winter climate.

Soil moisture is also a factor. Rainfall is usually insufficient for any except the most drouth-resistant plants, and irrigation will be needed for best results.

Cotton Root Rot

Phymatotrichum root rot is also a limiting factor in the choice of ornamentals. It is disappointing to have a useful and well-located tree suddenly wither and die. The whole landscape scheme is upset and years of waiting are in prospect before a tree can be grown to replace it. Resistance of ornamental plants to root rot is not completely known but such notes as are available will have some value. For additional information on this subject see Texas Station Bulletin No. 527 (6).

Where to Get Plants

In most cases, trees and shrubs are best obtained from nurserymen. If a large number are needed of one kind, seeds may be purchased or collected. Some of the plants easily grown from cuttings, such as athel (*Tamarix aphylla*), plane-tree or sycamore, and mulberry are readily obtainable at very little cost.

If plants are dug in the wild, it is best to get small plants, and if possible a ball of earth should be taken.

Transplanting

The best time for transplanting of most plants is in December and January. Evergreen trees or shrubs usually do best if balled and burlapped, but deciduous trees or shrubs may usually be moved bare rooted. The roots should never be allowed to dry out in transplanting.

Plants obtained from a nursery are usually pruned properly when shipped, but if wild plants are moved it will be necessary to prune the tops back considerably to correspond with loss of the root system.

The hole for planting should always be sufficiently large to accommodate the roots without bending. Only pulverized soil should be used around the roots. Water usually should be applied immediately after planting to pack the soil properly. This will avoid the possible injury to the roots by tamping the soil.

Evergreen Shade Trees

Shade is the most important factor in landscaping a home in Southwest Texas, and should be given first consideration. Shade is often acceptable even in the winter time. For this reason, as well as for appearance at that season, evergreen trees should often be given preference. A list of evergreen shade trees is given in Table 1. The choice shade tree in the list is undoubtedly the live oak, but growth is slow. Unless a location can be found with live oak trees already in place, it will be necessary to provide temporary shade from some other source. Vines on arbors or quick growing trees such as athel that can be cut out later are desirable.

Some of the more commonly used trees are discussed, in addition to the brief information presented in Table 1:

Anacua, (*Ehretia elliptica*). Native in South Texas; a good evergreen street tree or small tree, with white fragrant flowers in spring. It is quite hardy in South Texas and very resistant to cotton root rot. It has the disadvantage of slow growth.

Athel, (*Tamarix aphylla*). Introduced from Asia; rapid growth, easily propagated from cuttings; resistance to root rot good. This is a popular windbreak tree but is rather brittle in high winds and is tender below 20° F. Therefore, it is not particularly desirable as a shade tree.

Australian Pine, (*Casuarina* spp.). Introduced from Australia; makes a nice tree like a pine, although not a true pine. For those who like the sound of the wind through the pines this is a welcome addition to the landscape planting. It probably will not withstand much cold below 20° F., but is about as cold resistant as the orange. It makes a dense shade.

Carob, (*Ceratonia siliqua*). (Figure 2). Introduced from Asia Minor; a very pretty tree with dense shade, well worth growing, but it is susceptible to cotton root rot. It should be grown near a constant water supply to avoid possible loss from root rot.

Catclaw, (*Acacia wrightii*). (Figure 3). This is not the common species, but one that grows in the Nueces Canyon. It makes a larger tree, is semi-evergreen and is more attractive. The shade is somewhat open. It requires considerable pruning of the lower branches, which tend to droop.

Ebony, Texas, (*Pithecolobium flexicaule*). (Figure 4). Native south of Laredo; any soil; from seeds or transplanted from wild. Ebony is a very attractive small tree grown successfully as far north as Carrizo Springs.

Table 1. Evergreen shade trees

Scientific name	Common name	Approximate feet		Shade	Rate of growth	Resistance to		Grown from
		Height	Spread			Root rot	Cold	
Acacia farnesiana (N)	Huisache	30	30	dense	moderate	good	hardy	seeds (1)
Acacia wrightii (N)	Catclaw	25	30	medium	moderate	good	hardy	seeds (1)
Bumelia lanuginosa (N)	Gum elastic	20	15	medium	slow	good	hardy	seeds
Casuarina spp	Australian pine	50	20	dense	rapid	good	20° F	seeds. green cuttings
Ceratonia siliqua	Carob	40	30	dense	moderate	poor	15° F	seeds
Cordia boissieri (N)	Wild olive	15	15	dense	moderate	good	20° F	seeds
Diospyros texana	Texas persimmon	15	20	dense	slow	good	hardy	seeds
Ehretia elliptica (N)	Anacua	20	20	dense	slow	good	hardy	root sprouts
Eriobotrya japonica (C)	Loquat	15	20	dense	moderate	good	hardy	seeds
Eucalyptus bridgesiana	Eucalyptus	100	20	medium	rapid	good	18° F	seeds (2)
Eucalyptus gunnii	Cider gum	40	20	medium	rapid	good	15° F	seed (2)
Eucalyptus longirostris	Eucalyptus	100	40	medium	rapid	good	15° F	seed (2)
Eucalyptus microtheca	Eucalyptus	50	40	dense	rapid	good	18° F	seed (2)
Eucalyptus polyanthemos	Australian beech	50	30	medium	moderate	good	18° F	seed (2)
Eucalyptus rostrata	Red gum	100	20	medium	rapid	good	18° F	seed (2)
Eucalyptus rubida	Candlebark gum	50	15	medium	rapid	good	15° F	seed (2)
Eucalyptus sideroxylon rosea	Red ironbark	50	15	medium	rapid	good	15° F	seed (2)
Eucalyptus stuartiana	Apple gum	80	20	medium	rapid	good	15° F	seed (2)
Eucalyptus tereticornis	Forest gray gum	150	15	medium	rapid	good	15° F	seed (2)
Fraxinus velutina (C)	Rio Grande ash	25	20	medium	moderate	good	hardy	seed
Juniperus lucayana (N)	Gulf Coast cedar	25	15	medium	moderate	good	hardy	seed (3)
Juniper mexicana (N)	Mountain cedar	30	15	medium	moderate	good	hardy	seed (3)
Leucaena pulverulenta	Tepeguaje	50	20	medium	rapid	good (?)	20° F	seed
Magnolia grandiflora (C)	Magnolia	40	30	dense	slow	fair	hardy	seed (4)
Phoenix canariensis	Canary palm	25	30	dense	moderate	good	15° F	seed
Phoenix dactylifera	Date palm	30	25	medium	moderate	good	10° F	seed
Pithecolobium flexicaule (N)	Texas ebony	20	15	dense	slow	good	10° F	seed
Quercus virginiana (N)	Live oak	50	60	dense	moderate	good	hardy	seed
Sabal texana (N)	Texas palm	40	15	medium	moderate	good	hardy	seed
Schinus molle	Pepper tree	25	25	medium	moderate	fair	20° F	seed
Tamarix aphylla	Athel	25	25	dense	rapid	good	20° F	cuttings
Washingtonia filifera var. robusta	Washington palm	30	15	medium	moderate	good	12° F	seed

(N) Native. (C) Not grown on Experiment Station.
(1) Pour boiling water over seeds and allow to stand over night; sow at once.
(2) Very small seed; sow in flats and cover very lightly with sand; keep wet until emerge.
(3) Slow germinating.
(4) Difficult to transplant.

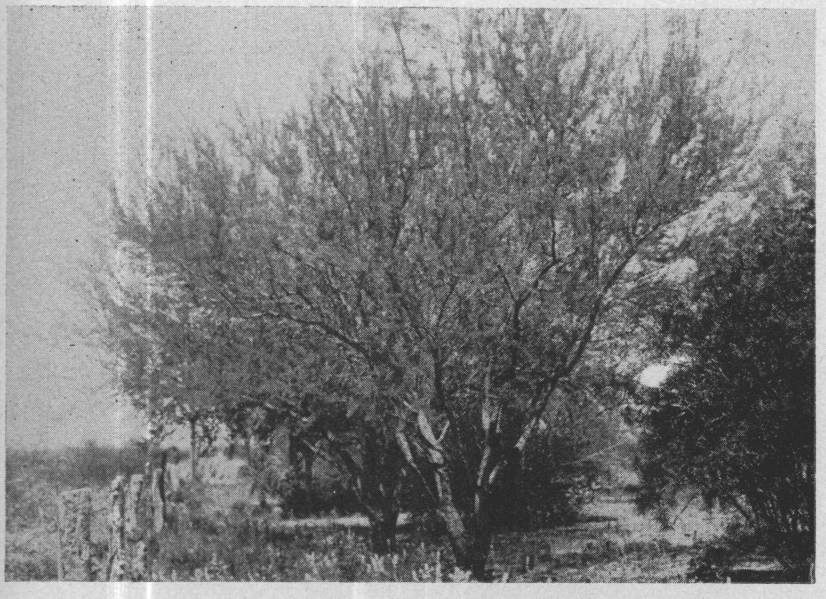


Figure 3. The Nueces Canyon catclaw is a native semi-evergreen shade tree.

Figure 4 Texas ebony is an attractive small evergreen tree. Courtesy Sadie Hatfield.

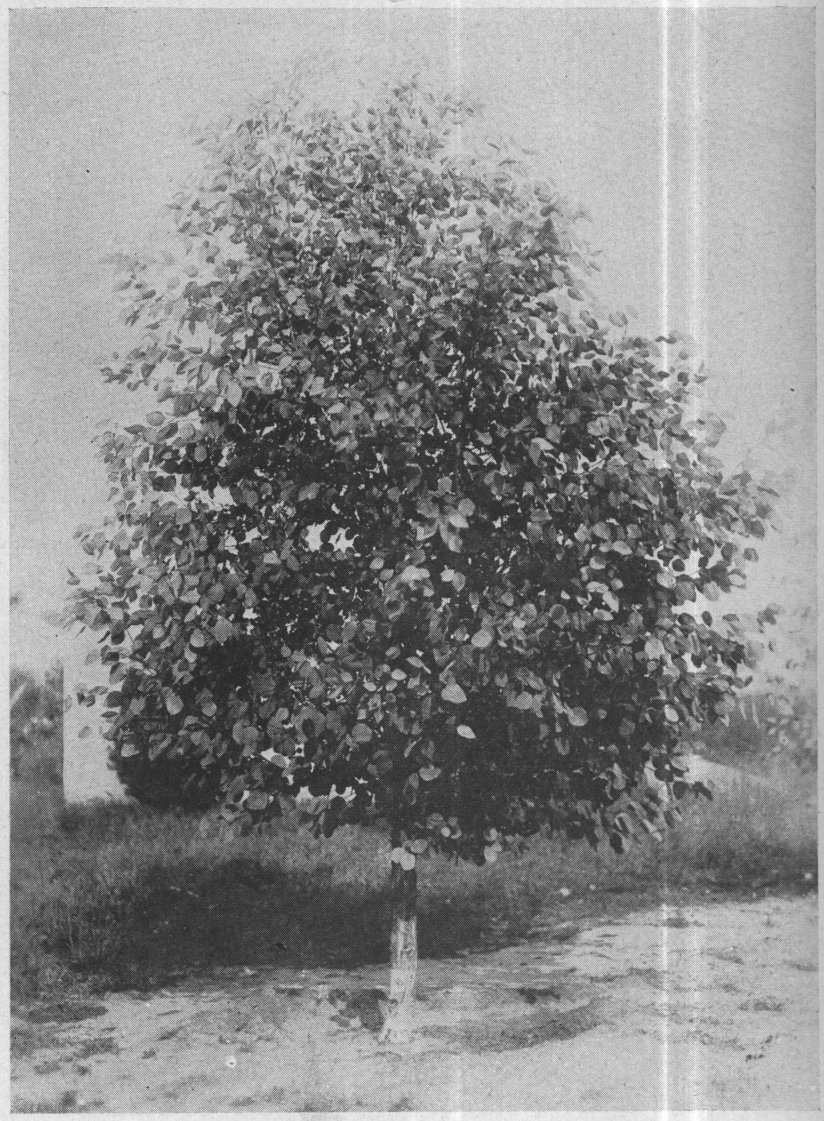


Figure 5. Eucalyptus makes rapid growth. This shows 2 years' growth.

Figure 6. Eucalyptus make good windbreaks. These trees are 50 feet tall 5 years after planting.

Figure 7. Picnic grounds at the Winter Garden station are shaded by eucalyptus.

Gum Trees, (*Eucalyptus*). (Figures 5, 6, 7). Introduced from Australia; evergreen; tall trees to 100 feet or more; spread very little unless cut back; rapid growth; drouth-resistant; tender below 15° F., and young growth often freezes below 20° F., resistance to root rot good to moderate; easily propagated from seeds.

These are quick growing, attractive trees useful for windbreaks. They are not ideal shade trees, but are well worthy of consideration. Only the hardy species should be planted; the best are: *E. rostrata, polyanthemos, tereticornis, gunnii, bridgesiana* and *microtheca.*

Huisache, (*Acacia farnesiana*). This is the prettiest of all the native shade trees and is highly recommended for practically any location. It blooms early in the spring with highly fragrant yellow flower heads. It is resistant to both heat and cold in this section. It requires frequent pruning to keep drooping branches out of the way.

Live Oak, (*Quercus virginiana*). (Figure 1 on front cover). Native; along streams or in deep soils, widespreading, sometimes to 80 feet or more; sold by nurseries, but can be transplanted from the wild.

Live oaks require a deep soil with fairly abundant moisture. If planted on shallow upland soils they will need abundant irrigation for best results. The live oak is typical in a South Texas landscape. With the wide-spreading branches, it seems made-to-order for a home shade tree. It sheds its leaves in March each year and grows new foliage at once.

Loquat, (*Eriobotrya japonica*). Introduced from Eastern Asia; a very pretty, small tree for the lawn. It is also grown for its yellow plum-like fruit, but, since it blooms in the fall and ripens its fruit in February, it seldom matures a crop except in very mild winters.

Magnolia, (*Magnolia grandiflora*). Magnolias have not been tested at Winter Haven, but they grow in several localities of the area and are very attractive. They are native in East Texas and make a beautiful tree, but are slow growers.

Palms. In the subtropical areas where they can be grown, no plants are better suited to the landscape than palms. They are immune to cotton root rot and are seldom attacked by insects. Sometimes, the large palm-borer (rhinoceros beetle) does serious damage.

Canary palm (*Phoenix canariensis*) is a hardy, attractive palm for roadside planting, lawn specimen, or shade. It is easily grown from

Figure 8. Date palms are grown for their fruit but may also be used for shade.

Figure 9. Pines can be grown in light sandy soils with irrigation.

Figure 10. Wild olive *(Cordia boissieri)* flowers almost continuously.

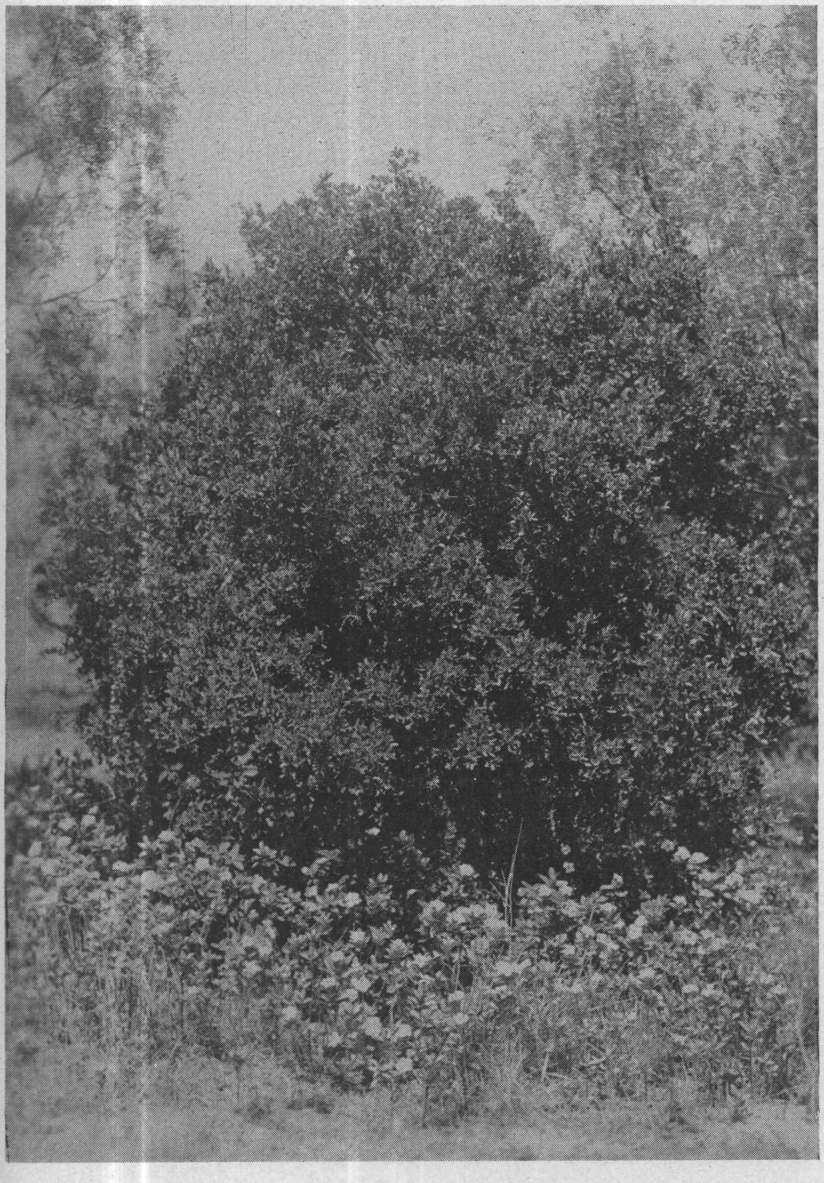


Figure 11. Native Texas persimmon makes a good shrub or small tree.

seed and does not make offshoots. The date palm (*Phoenix dactylifera*) (Figure 8) is grown for its fruit, but may also be used in the landscape for shade. It is not as ornamental as the Canary palm, and makes offshoots which must be removed to make it acceptable in the landscape planting. Other palms are the Texas palm (*Sabal texana*) and the Washington palm (*Washingtonia filifera* var. *robusta*), both of which are fan-leaf palms and are commonly used for roadside or lawn plantings. They both grow tall eventually and provide some shade.

Pines will grow on sandy soils in Southwest Texas (Figure 9). They require irrigation.

Miscellaneous. Small evergreen trees that can be pruned to provide shade are: wild olive (*Cordia boissieri*), (Figure 10), Texas persimmon, (*Diospyros texana*), (Figure 11), and Mountain cedar, (*Juniperus mexicana*). All of these are native and well adapted. The wild olive is tender below 20° F.

Deciduous Shade Trees

Deciduous trees, of course, give no shade for about four months of the year, but are often valuable because of their quick growth, or resistance to cold. Those listed in Table 2 are all resistant to any cold weather likely to occur in Southwest Texas. As will be noted, most of the trees listed are native to this area (4).

Pecans are very often planted in this section. Other useful and attractive trees are sycamore, palo blanco, Arizona walnut and cedar elm. For quick results and dense shade, the Texas umbrella is outstanding, but the berries are very unsightly in the fall and winter and will probably have to be removed each year. The mulberry listed as *Morus kagayamae* is a new variety introduced from Algeria that does not produce fruit. For that reason it is valuable as a shade tree. Most nurserymen do not yet list it, but it should be generally used. Spanish oak is a very attractive native tree.

Bald Cypress, (*Taxodium distichum*). (Figure 12). This is native along streams and grows slowly when supplied with plenty of soil moisture. It is a very pretty tree, growing eventually to tremendous size under favorable conditions.

Cottonwood, Mountain, (*Populus acuminata*). (Figure 13). Native to the Rocky Mountains and the most ornamental of the cottonwoods. All cottonwoods and willows are apparently susceptible to root rot and should be grown only where they have abundant moisture. Mountain cottonwood grows rapidly from cuttings under favorable conditions.

Table 2. Deciduous shade trees

Scientific name	Common name	Approximate feet		Shade	Rate of growth	Resistance to		Grown from
		Height	Spread			Root rot	Cold	
Acacia greggii (N)	Catclaw	15	15	open	moderate	fair	hardy	seeds (1)
Broussonetia papyrifera	Paper mulberry	30	25	dense	rapid	poor	hardy	cuttings
Carya buckleyi (N)	Hickory	20	15	medium	slow	good	hardy	seed (2)
Carya pecan (N)	Pecan	80	50	medium	moderate	fair	hardy	seed (2)
Celtis reticulata (N)	Palo blanco	40	30	medium	rapid	good	hardy	seed
Celtis sinensis	Chinese hackberry	20	25	medium	moderate	good	hardy	seed
Fraxinus berlandieriana (N)	Ash	30	30	medium	rapid	fair	hardy	seed (2)
Juglanus major (N)	Arizona walnut	30	25	medium	moderate	fair	hardy	seed (2)
Juglans rupestris (N)	Spanish walnut	20	15	medium	moderate	fair	hardy	seed (2)
Leucaena retusa (N)	Texas mimosa	15	10	medium	rapid	good	hardy	seed
Melia azederach var	Texas umbrella	30	40	dense	rapid	poor	hardy	seed
Morus kagayamae	Non-fruiting mulberry	50	50	dense	rapid	good	hardy	cuttings
Morus microphylla (N)	Mountain mulberry	20	20	medium	slow	good	hardy	cuttings
Parkinsonia aculeata (N)	Retama	20	20	open	moderate	fair	hardy	seed
Pistacia chinensis	Chinese pistache	30	40	dense	moderate	fair	hardy	seed
Platanus occidentalis (N)	Sycamore	60	20	dense	rapid	good	hardy	cuttings, seed
Populus acuminata	Mountain cottonwood	40	20	dense	rapid	fair	hardy	cuttings
Prosopis juliflora var. glandulosa (N)	Honey mesquite	20	40	open	moderate	fair	hardy	seed
Pterocarya stenoptera	Chinese wing-nut	40	30	medium	rapid	fair	hardy	seed (2)
Quercus texana (N)	Spanish oak	40	25	medium	moderate	fair	hardy	seed (2)
Salix nigra (N)	Willow	40	40	medium	rapid	poor	hardy	cuttings
Sapindus drummondii (N)	Soapberry	20	15	medium	moderate	good	hardy	seed
Sapindus mukorossi	Chinese soapberry	20	20	medium	rapid	good	hardy	seed
Taxodium distichum (N)	Bald cypress	100	50	medium	moderate	fair	hardy	seed
Ulmus crassifolia (N)	Cedar elm	30	20	medium	moderate	good	hardy	seed

(N) Native.
(1) Pour boiling water over seeds and allow to stand over night; sow at once.
(2) Plant in fall as soon as ripe.

Figure 12. Bald Cypress *(Taxodium dictichum)* grows near water.

Figure 13. Mountain cottonwood *(Populus acuminata)* makes an attractive, quick-growing tree.

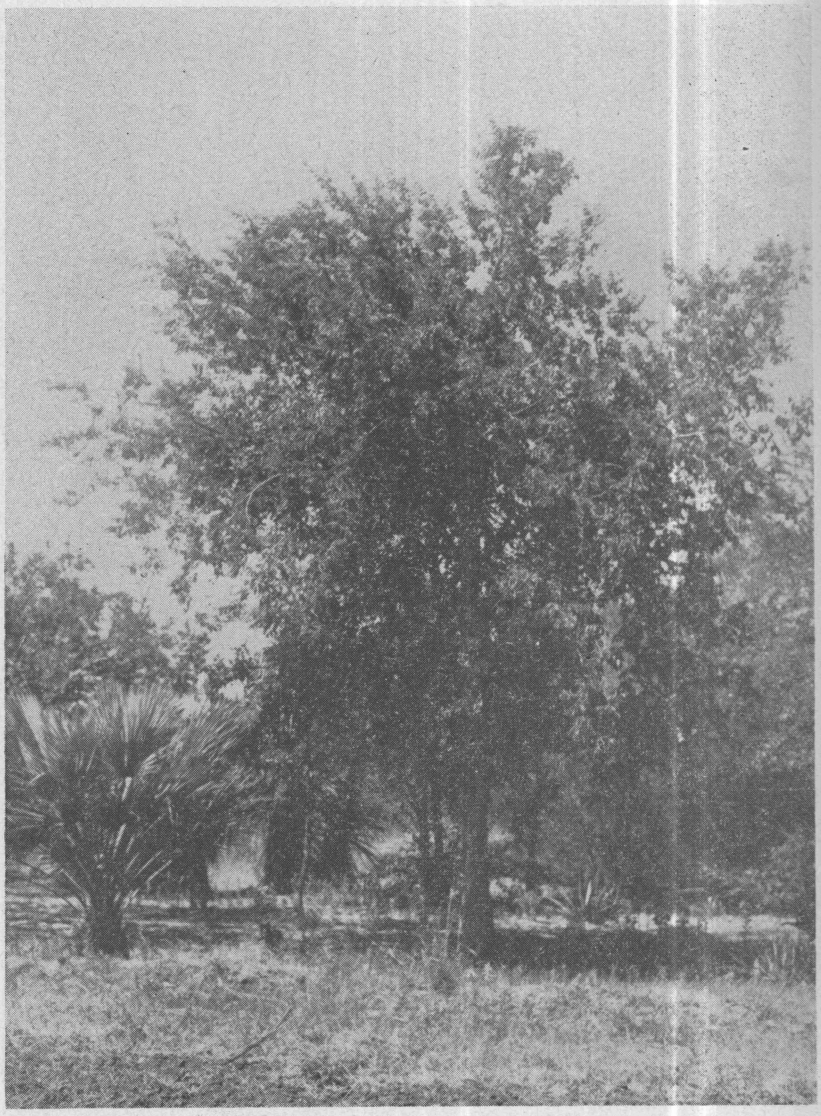


Figure 14. The western hackberry, or palo blanco, is a native shade tree easily transplanted from the wild. The small palm is the blue palm.

Figure 15. Chinese hackberry, 5 years old, provides good shade.

Figure 16. St. Augustine grass does well under mesquite trees.

Elm, (*Ulmus* spp.). In general, elms are not recommended because of root rot. The Chinese elm, (*Ulmus parvifolia*), is particularly susceptible. The native elm, (*Ulmus crassifolia*), has good resistance.

Hackberry or Palo blanco, (*Celtis reticulata*). (Figure 14). Native, adapted to most soils; easily transplanted from the wild. It requires pruning to remove the lower branches which tend to droop. This is perhaps the safest tree to plant where root rot is bad. The shade is fairly good. The eastern hackberry will also grow here. A new introduction from China, *Celtis sinensis,* looks promising (Figure 15).

Hickory, (*Hicoria buckleyi*). Native in deep sands near Devine; slow to moderate growth. This has not been tried at Winter Haven, but it should be all right in deep sands. Makes a good shade.

Mesquite, (*Prosopis glandulosa*). (Figure 16). Native; all soils. Use of mesquites in the landscape plan usually consists of leaving them where they already grow when clearing the new land. They give an open shade unless well watered, and are often quite useful while waiting for other trees to grow. The disadvantage is their susceptibility to root rot under irrigation.

Mulberry, Non-fruiting, (*Morus* spp.). (Figure 17). Both native and introduced; any soil; deciduous. For shade, fruiting kinds should be avoided. A recent introduction, *Morus kagayamae,* has no fruit and is a very desirable shade tree. So far none of these have been affected by root rot at Winter Haven. Mulberries are easily propagated from cuttings.

Mulberry, Paper, (*Broussonetia papyrifera*). (Figure 18). Not a true mulberry, but a rapid growing tree. It is very susceptible to root rot, and should be used only on a temporary basis.

Oak, Spanish, (*Quercus texana*). Native to Edwards Plateau country. It is a very attractive shade tree and the only one of the deciduous oaks recommended for planting in Southwest Texas. It has not been tested on the experiment station at Winter Haven but is commonly grown as an ornamental.

Pecan, (*Carya pecan*). Native, along streams. Pecans are not successful on shallow upland soils unless abundantly watered. If not near streams, they will doubtless require abundant irrigation, even on deep soils. They are recommended only for deep soils and where plenty of water is available for irrigation.

Retama, (*Parkinsonia aculeata*). (Figure 19). Native; any soil. Retama makes a rather open shade, but is very drouth resist-

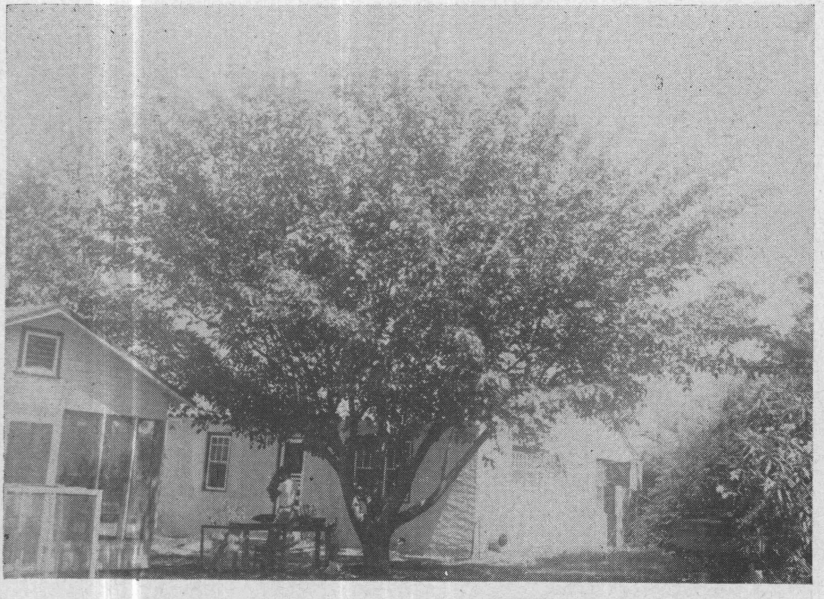


Figure 17. The non-fruiting mulberry makes an excellent shade tree.

Figure 18. Paper mulberry *(Broussonetia papyrifera)* makes shade in one year from planting cuttings.

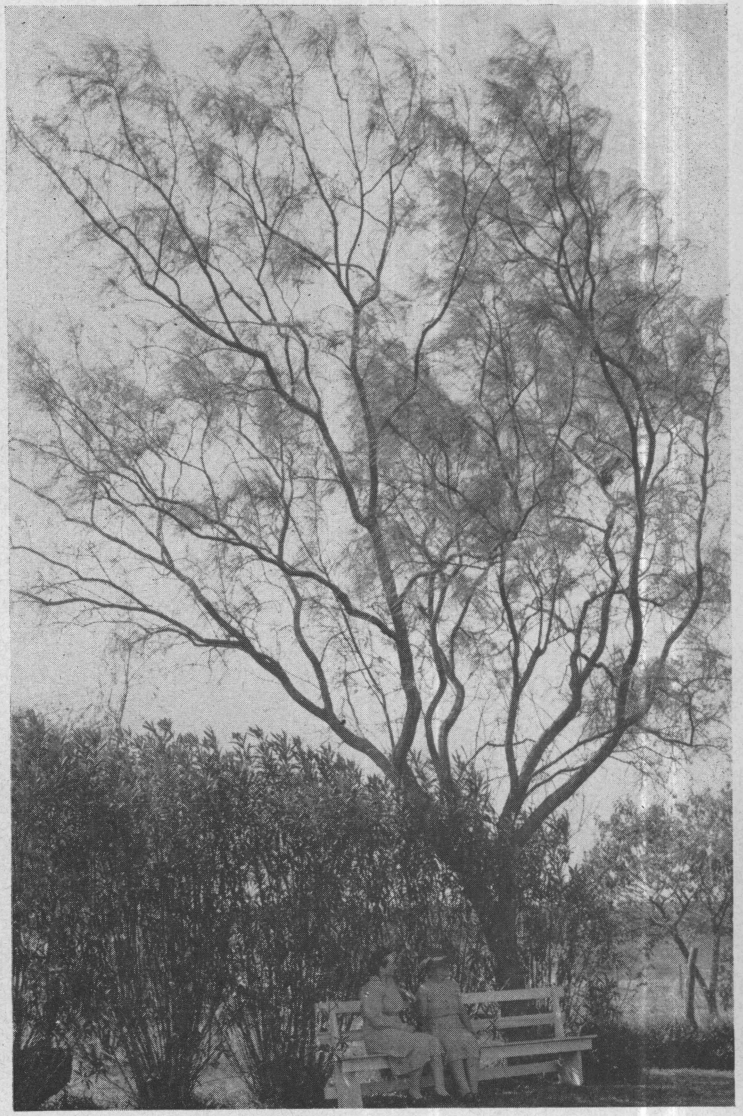


Figure 19. Retama is a native with open shade, but is hardy and has attractive yellow flowers. Courtesy Texas Extension Service and Sadie Hatfield.

Figure 20. Sycamore is an excellent native shade tree easily grown from cuttings.

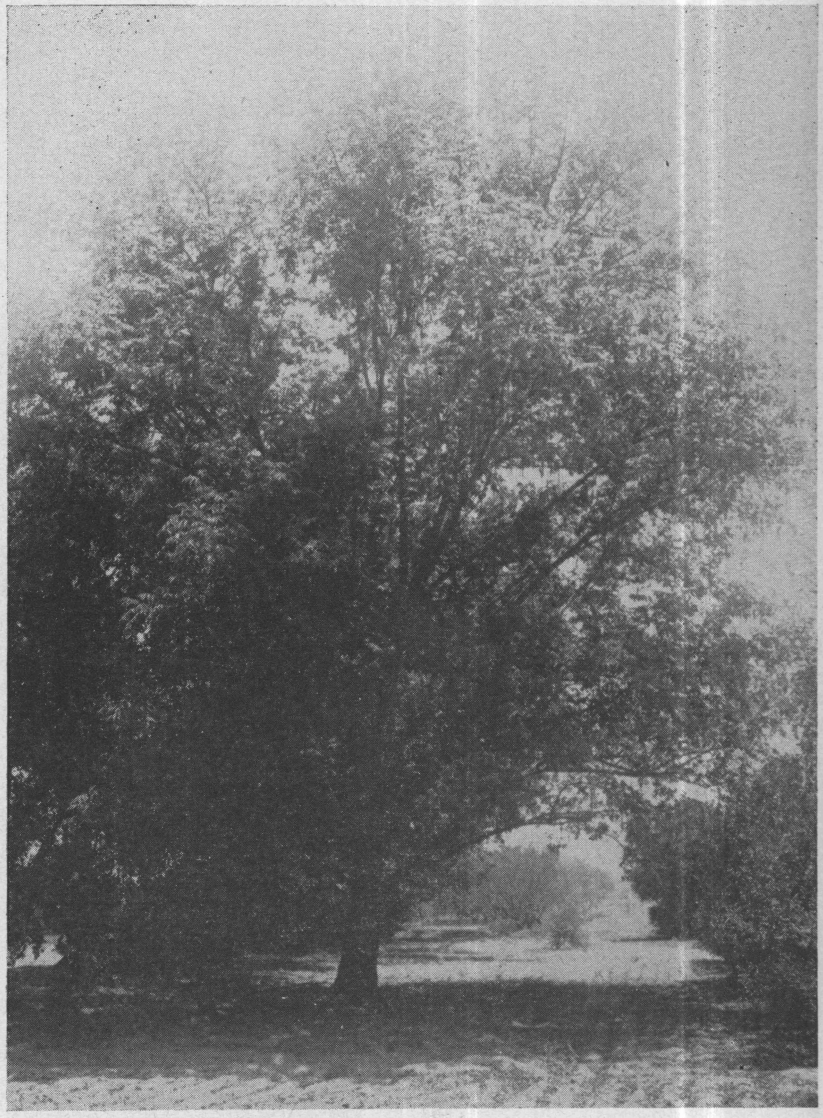


Figure 21. Chinese wingnut grows rapidly and makes good shade but is susceptible to root rot.

ant. The showy yellow flowers are borne abundantly in the spring and often in the fall. Dried green leaves are sometimes used in basket work.

Soapberry, (*Sapindus drummondii*). Native, any soil. Soapberry (or wild chinaberry) is usually a small tree, but may be useful where room is not available for a larger one. A larger species from China, *Sapindus mukorossi,* grows more rapidly and makes better shade.

Sycamore, (*Platanus occidentalis*). (Figure 20). Native, along streams. Sycamore makes an excellent shade tree, but requires irrigation on upland soils. It is readily grown from dormant cuttings.

Texas Umbrella, (*Melia azedarach umbraculiformis*). (Figure 22). Introduced; any soil. Texas umbrella gives more dense shade than any other tree, and is very useful. Its disadvantage is the unsightly berries in winter.

Walnut, (*Juglans major*). Native. The Arizona walnut is a very attractive tree, but is only moderately resistant to root rot. It is worth trying in a limited way.

Wingnut, (*Pterocarya stenaptera*). (Figure 21). Introduced; apparently any soil. The Wingnut comes from China and, so far, has shown up very well at Winter Haven. It grows rapidly and, by proper pruning, makes a good shade tree.

Figure 22. Texas Umbrella grows rapidly and makes very dense shade. Good for the play yard.

Evergreen Shrubs

Since we do not have snows to hide our landscape in the winter, we prefer the shrubs that retain their leaves. The choice of evergreen shrubs depends on size, quickness of growth, color of foliage, flowers, utility, and resistance to climatic extremes and diseases, especially root rot.

Abelia, (*Abelia grandiflora*). Introduced; all soils. Abelia is very hardy and commonly grown. It is not showy, but is dependable as a filler to contrast with others of more pronounced color.

Agarita, (*Berberis trifoliolata*). Native; all soils. A very attractive little shrub with light green grayish foliage that thrives almost anywhere. The attractive fruits are edible and are often used for jellies.

Apache Plume, (*Fallugia paradoxa*). (Figure 23). Native; along streams in hill country; seeds with long feathery tails, giving the name "Apache plume." This is an attractive shrub, flowering the first year from seed and bearing many rose-like white flowers almost continuously through the spring, summer and fall. In planting seed, it is important to use only freshly collected seed. Seed several months old will not germinate.

Arbor-vitae, (*Thuja orientalis*). (Figure 24). Introduced; any soils; many sizes from 4 to 15 or 20 feet tall; foliage varies from golden to dark bluish green; good resistance to root rot. Arbor-vitae are very heat resistant. Some varieties blend especially well in the landscape. Among the best varieties tried are Goldspire, Wintergreen, and Miniature.

Bamboo. Introduced; many species belonging to about a dozen genera were planted; any soil; background or windbreak; from 6 to 20 feet high, spread 15 feet; propagated from clumps or rooted shoots. These plants require a good water supply, and make a dense growth.

Banana, (*Musa* spp.). Native to tropics, but will grow in South Texas with a little protection. This gives a good tropical effect to the landscape. Bananas require abundant soil moisture.

Bird of Paradise, (*Caesalpinia gilliesii*). Native, and a showy ornamental for roadside planting. It should be pruned to get more flowers.

Black brush, (*Acacia amentacea*). Native, gravelly ridges or sand hills. This species grows without a definite trunk, usually consisting of several stems rising from the same base. It is well worth cultivating for the flowers in early spring.

Figure 23. Apache plume *(Fallugia paradoxa)* flowers almost continuously.

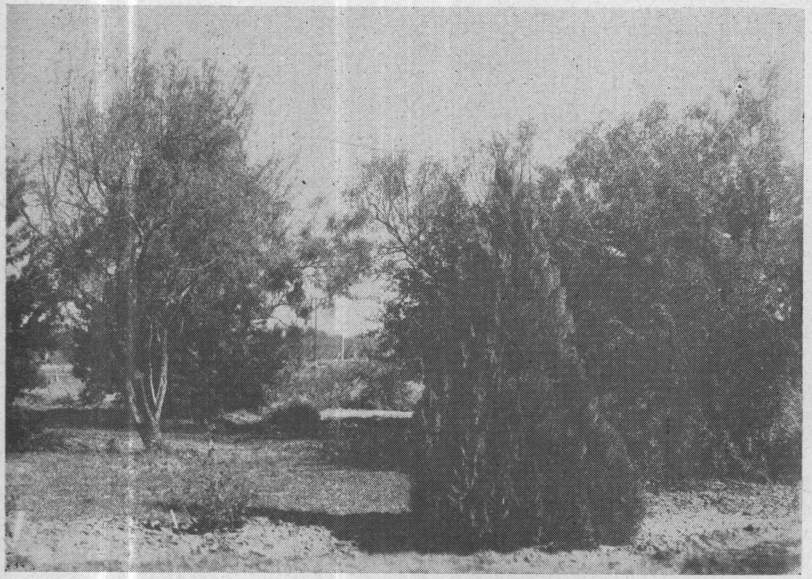


Figure 24. Arbor-vitae does well in Southwest Texas. 1933.

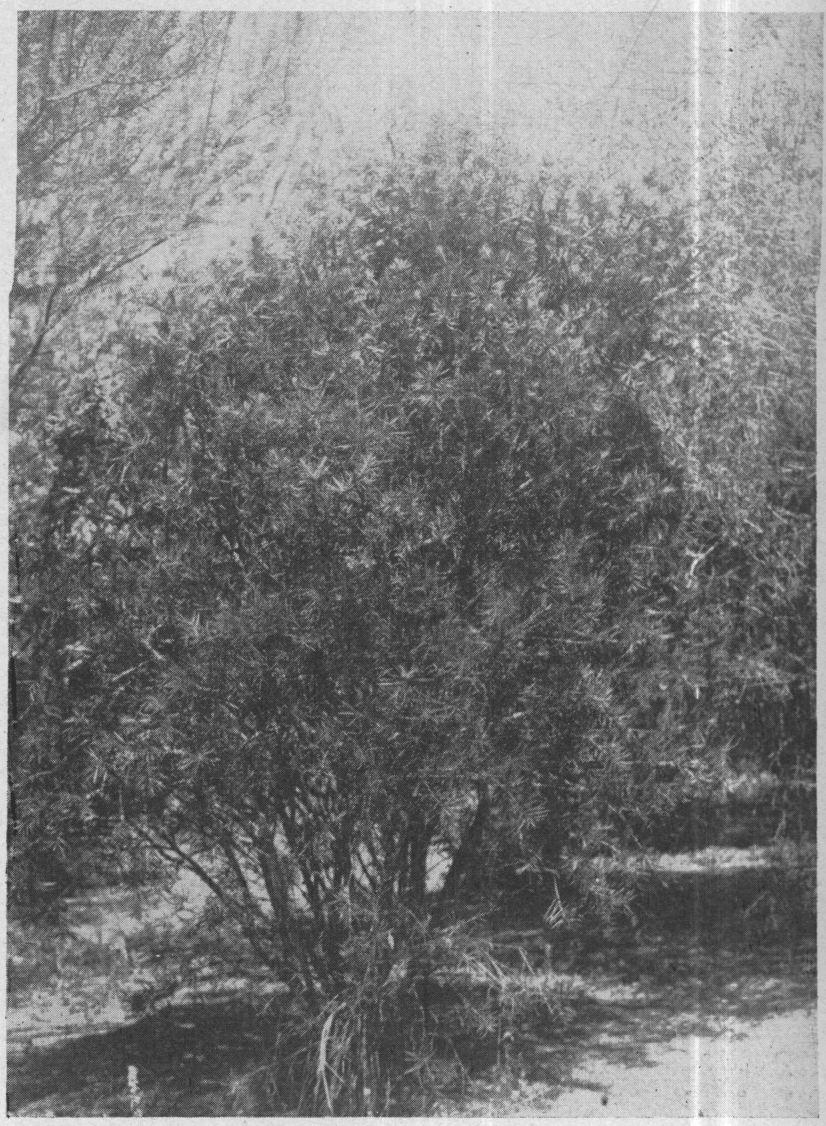


Figure 25. This Bottlebrush has large showy red flowers in the spring.

Figure 26. The box-orange *(Severinia buxifolia)* makes an excellent evergreen hedge.

Figure 27. Brazil *(Condalia obovata)* can be pruned to make a decorative shrub.

Bottle-brush, (*Callistemon citrinus*). (Figure 25). Introduced from Australia; has large showy, brilliant red flowers like a bottle-brush, in the spring. Another bottle-brush (*Melaleuca styphelioides*) from Australia has very attractive foliage, and, under favorable conditions, may make a tree.

Box Orange, (*Severinia buxifolia*). (Figure 26). Introduced from India; the box orange is a citrus relative that makes a dense evergreen, spiny plant. It grows slowly from seed but makes a pretty hedge. Fruits are black and of no value.

Brazil, (*Condalia obovata*). (Figure 27). Native; foliage drops off only following severe cold. This is an attractive native, very common on sandy soils. It can be pruned to form shade, but is more attractive as a background or specimen plant. The fruit is edible and a favorite of birds. Seeds should be planted before they dry.

Cacti. Space does not permit the discussion of the many genera and species of cactus that may be used in the Southwest Texas landscape. Those interested are referred to *Texas Cacti,* by Schulz and Runyon, obtainable from your library or bookdealer. Another good reference is the Cactus Journal published by the Cactus and Succulent Society of America, 6162 N. Figueroa Street, Los Angeles, California.

Calamondin, (*Citrus mitis*). Native of the Philippines and sometimes called Philippine lime. It is an upright growing plant as tall as 20 to 25 feet, and one of the hardier citrus varieties. It comes true from seed. Since it flowers almost continuously, it has showy fruits of a deep orange color practically the year around. The fruit is useful in juices or drinks.

Canary Island Lupine, (*Adenocarpus foliolosus*). Recently introduced; sandy soils; yellow flowers, profuse. A very beautiful plant with small leaves and a desirable one if root rot is not present. Probably best grown from seed.

Cape-Jasmine, (*Gardenia jasminoides*). Introduced; sandy soils; white flowers, abundant, intensely fragrant; dark green, dense foliage; somewhat susceptible to root rot; requires abundant moisture; grows from cuttings, but best with bottom heat. Cape-jasmine is an attractive plant but will need care. It is often grown in this area.

Carrizo, (*Arundo donax*). Native; any soil; needs abundant moisture. It will form a quick windbreak, but is difficult to keep in bounds.

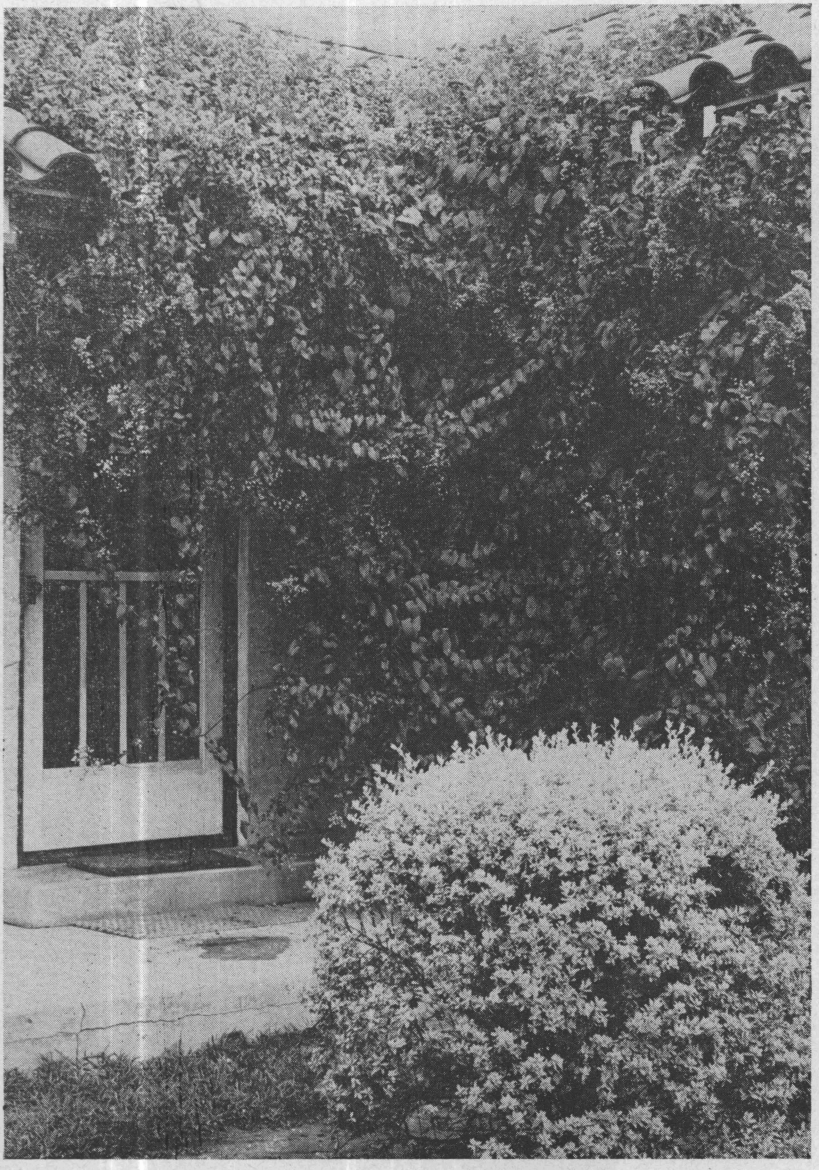


Figure 28. Queen's wreath *(Antigonon leptopus)* is an excellent vine. Ceniza *(Leucophyllum)* in the foreground.

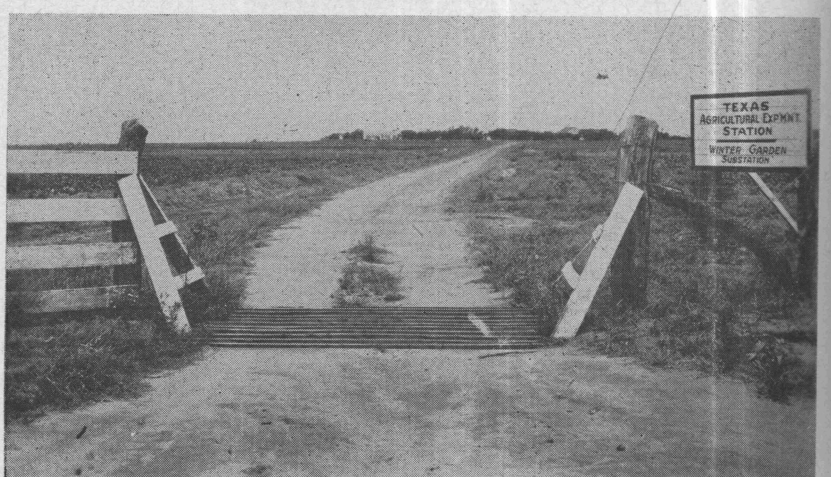


Figure 29. Front entrance, 1932, before ornamentals made any growth.

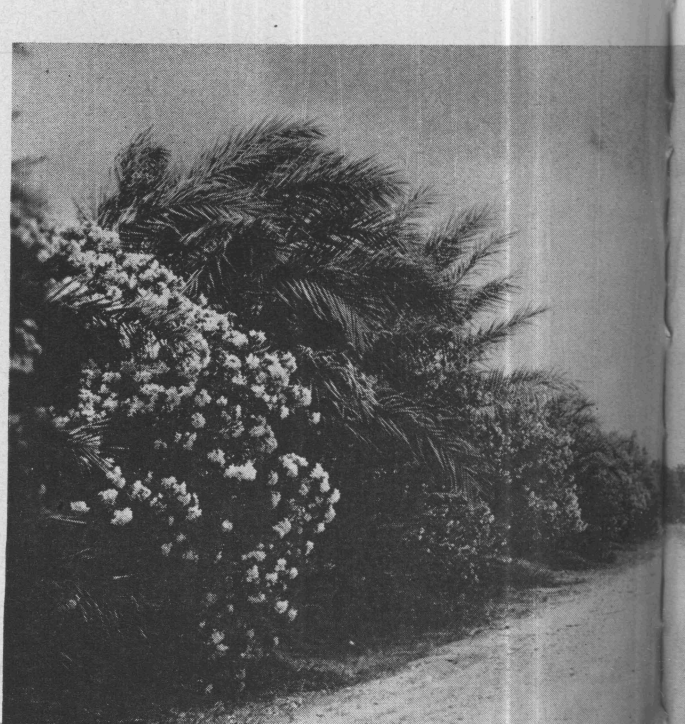
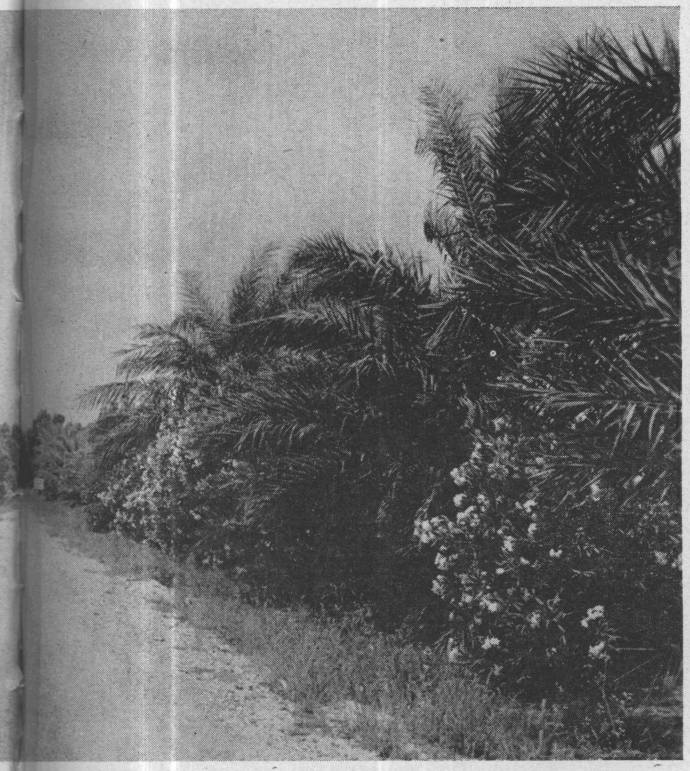


Figure 31. Station entrance in 1940, 8 years after the pictu

Figure 30. Station entrance 3 years later than the first picture.



ea ure. The plants are oleanders and date palms alternating.

Figure 32. Arizona cypress makes a good windbreak. This picture was taken eight years after planting.

Figure 33. Rogers firethorn *(Pyracantha rogersiana)* is one of best ornamental shrubs in Southwest Texas.

Ceniza, (Barometer bush) (*Leucophyllum frutescens*). (Figure 28). Native; any soil; flowers lavender to purple, abundant, appear with rainy weather; foliage gray; slightly susceptible to root rot. The best and most useful of our native shrubs; it withstands heat, drouth and cold, and lends itself to almost any landscape use. It can be pruned to any shape desired. Transplanting seems to be most successful in August. It prefers full sun.

Century Plans, (*Agave americana*). Native escape; any soil, dies when it flowers (usually 10 to 15 years); easily transplanted from root sprouts. This plant needs plenty of room and full sun.

Citrange, (*Citrus-poncirus*). Some of the citrus hybrids have very ornamental fruits. They grow tall and are very thorny, so can only be used in background plantings or hedges. The most ornamental of these are Rusk and Carrizo citranges.

Colima, (*Xanthoxylum fagara*). Native to Southwest Texas. It grows as a dense shrub and may become fairly tall. It may be pruned to shape, and is well worth planting.

Creosote Bush, (*Larrea tridentata*). Native; on gravelly ridges. These little bushes are quite attractive in borders, or along walks where they receive full sun. It is also called "greasewood" because of the oily or greasy appearance of the leaves.

Cypress, Arizona, (*Cupressus arizonica*). (Figure 32). Introduced; from Arizona and New Mexico; any soil. The plants from seed are variable and may be large or dwarf, fast or slow growing, and may be any shade of green. Hence, except where planting for windbreak, it is usually best to buy grafted or cutting-rooted specimens from a reliable nursery. This species stands the climate well and is very attractive.

Cypress, Italian, (*Cupressus sempervirens*). Introduced; any soil, very heat and drouth-resistant. This plant, often associated with cemeteries, will resist adverse conditions and neglect better than many natives. Because of its height, the use is limited in the small landscape, but it is excellent for two-story dwellings or larger public buildings.

Dalea, Purple, (*Dalea formosa*). A native low-growing shrub with showy purple flowers in March. Easily transplanted.

Elaeagnus, (*Elaeagnus* spp.). Introduced; any soil; silvery tan foliage. Commonly planted, but probably not as useful as ceniza in the same situations. The two species most commonly offered are *E. macrophylla* and *E. pungens,* the latter in considerable variety.

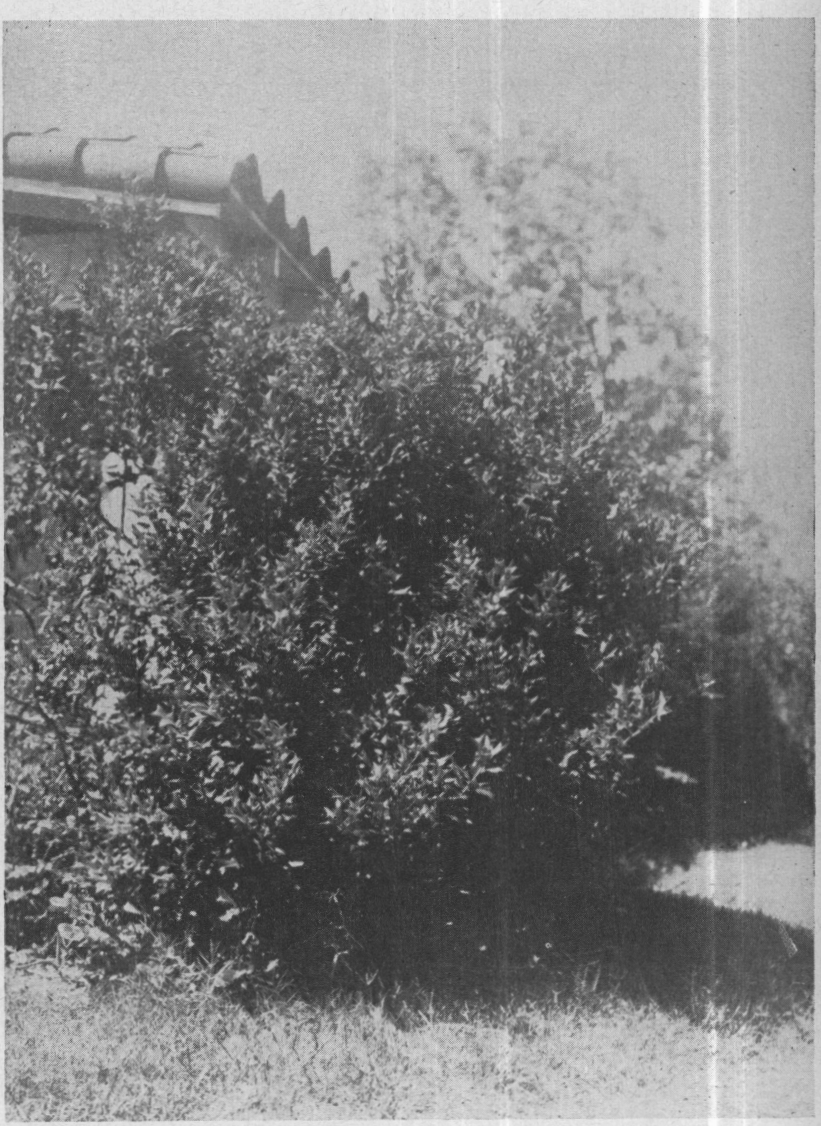


Figure 34. The Chinese holly stands high summer temperatures.

Feijoa, (*Feijoa sellowiana*). Introduced from Brazil; any soil. The foliage is gray-green and flowers brilliant red. Feijoa is often called pineapple guava, and the fruits are used for jellies. The shrub is very attractive, hardy and valuable in landscaping.

Fiddlewood, (*Citharexylum berlandieri*). Native in Lower Rio Grande Valley; any soil; white flowers, abundant and fragrant; berries red. This shrub is well adapted to this climate, but may lose the leaves at temperatures below 20° F. Some splitting of the bark also occurs at these low temperatures, but the plant quickly recovers. Flowers and fruit are both attractive and the plant may be pruned to shape.

Firethorn, (*Pyracantha* spp.). Introduced from India; any soil; foliage dark green; white flowers, showy, fruit, orange to red. This is one of the best evergreens for Southwest Texas. There are several species, the prettiest one being *P. rogersiana* (Figure 33). It is thorny and, therefore, not suited for planting close to walks.

Guajillo, (*Acacia berlandieri*). Native; mostly sandy or gravelly soils, but grows in any soil; foliage dark green, tender below 20° F.; white flowers, fragrant. Guajillo is a famous honey plant. The fern-like leaves make it an attractive ornamental, but the foliage does not stand temperatures below 15° F.

Guava, Strawberry, (*Psidium cattleianum*). Introduced from Brazil; a pretty shrub with red or yellow fruits that make good jelly. The Mexican guava (*Psidium guajava*) is a large plant with strongly aromatic yellow fruits that are used for jellies. The Mexican guava is commonly planted, but is easily frozen. It recovers quickly.

Holly, Chinese, (*Ilex cornuta*). (Figure 34). Introduced from Asia. It is the only holly, other than Yaupon, that is adapted to the high summer temperatures of this area.

Kumquat, (*Fortunella* spp.). Introduced; foliage green; white flowers, very fragrant; golden yellow fruits, very showy, edible; ripens in winter and spring. Kumquats are very attractive and the plants withstand considerable cold. Fruits are frozen below 25° F. Nagami is the most ornamental and grows the largest. Meiwa is dwarf in growth and more useful for eating. Marumi is intermediate in growth and quite ornamental.

Mountain Laurel or Mescal bean, (*Sophora secundiflora*). Native; along streams and in hill country; any soil; foundation or specimen; height 8 to 15 feet, spread 6 to 10 feet, growth slow; flowers in large purple clusters; seeds bright red and hard; difficult

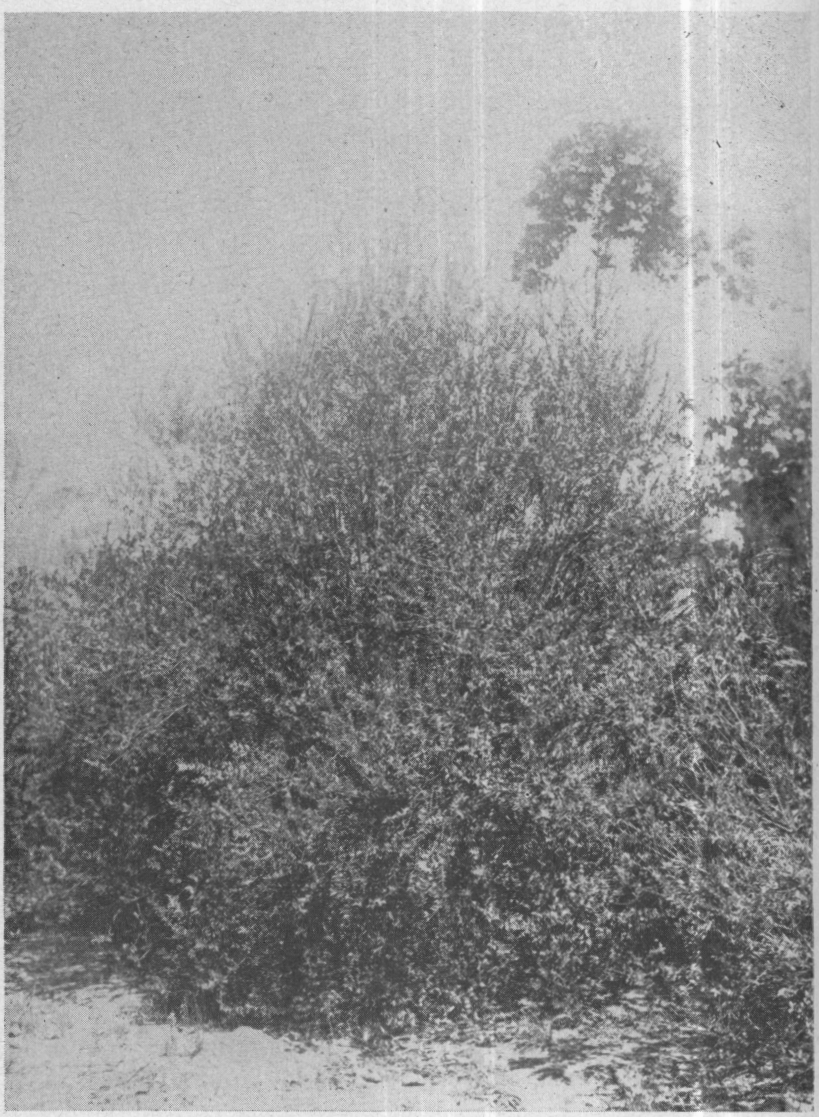


Figure 35. Roman myrtle is well adapted to Southwest Texas.

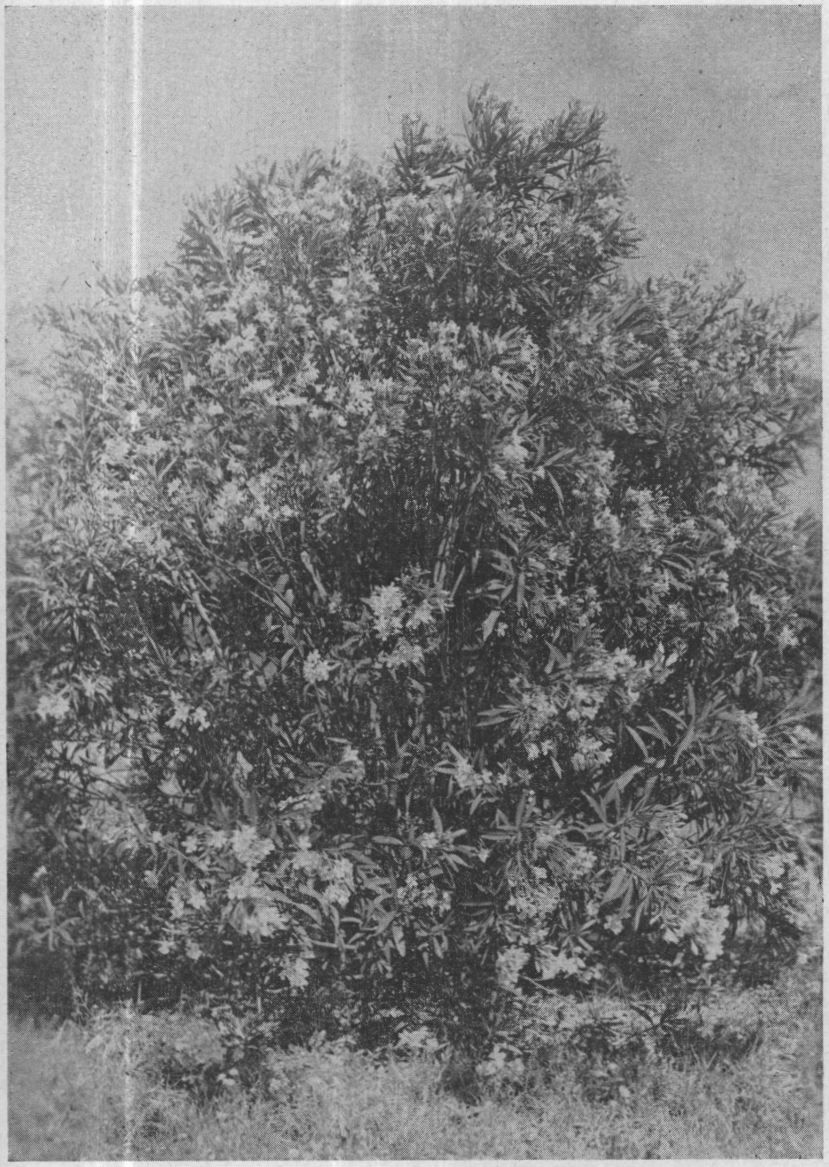


Figure 36. Oleander 4 years old in full flower.

to transplant; grows from seeds; will tolerate shade; somewhat susceptible to root rot. This plant is very attractive but, because of its slow growth and difficulty in transplanting, it is not much used. The flowers are showy but should not be brought indoors as they cause headaches. If one has patience, they are perhaps best grown from seeds planted in place. Some nurserymen are selling them in pots.

Myrtle, Roman, (*Myrtus communis*). (Figure 35). Introduced from the Mediterranean area. It is a pretty shrub that withstands high summer temperatures. It will require a little pruning to keep it in bounds since it can get fairly large.

Nandina, (*Nandina domestica*). Introduced; any soil. Foliage becomes bright red in winter. Nandina is normally used as a low shrub in foundation plantings to give color contrast.

Natal Plum, (*Carissa grandiflora*). Introduced from South Africa. It is a thorny shrub with attractive dark green foliage. It can be sheared and makes a good hedge where temperatures do not go below 20° F.

Oleander, (*Nerium oleander*). (Figure 36). Introduced from Asia Minor; any soil; flowers white, red, peach, yellow, very abundant, May to August. *Nerium indicum* is the sweet-scented oleander. These shrubs are well adapted and quite attractive. They do especially well in sands. They are not recommended where temperatures go below 10° F. Flowers and foliage are very poisonous and should be kept away from small children or livestock.

Palms. Several palms are useful as evergreen shrubs. The best ones tried are the Blue Palm (*Erythea armata*), (Figure 14), from Mexico and the Desert Palm, *Nannorrhops ritchieana,* from Afghanistan. Both are fan-leaf types. The Desert Palm grows in clusters and would be suitable only in group or border plantings.

Pampas Grass, (*Cortaderia argentea*). (Figure 37). Introduced; any soil; leaves long with serrate sharp edges; flower stalks tall, very showy; grows rapidly. Pampas grass is especially useful as a lawn specimen, or to set off a lily pool.

Pittosporum, (*Pittosporum* spp.). Introduced; any soil. The plants form a shapely shrub that is quite attractive and useful.

Poinciana, Yellow, (*Caesalpinia mexicana*). Introduced from Mexico. An evergreen shrub with abundant yellow flowers. It might appropriately be called a "machine-gun" shrub because on a warm day the ripe pods will burst open with an explosive sound and shoot the ripe seeds as far as 30 or 40 feet. The true Poinciana of the tropics (*Poinciana regia*) does not tolerate frost.

Figure 37. Pampas grass *(Cortaderia argentea)* gives tropical effect to landscape. The carob tree in the background is a good evergreen tree.

Poinsettia, (*Euphorbia pulcherrima*). Common in South Texas both as a winter pot-plant and in the open. The terminal leaves turn a bright red in the winter. They are likely to be frozen at 20° F., but will survive most winters in Southwest Texas.

Privet, (*Ligustrum* spp.). Introduced; any soil; foliage light green to glossy dark green; flowers in white panicles, fragrant. The most useful foundation shrubs are varieties of *Ligustrum lucidum*. *L. japonicum* makes a good hedge, or even shade tree. Because they are somewhat susceptible to root rot, they are a little risky when planted in a conspicuous place.

Soapbush, (*Porlieria angustifolia*). (Figure 38). Native, any soil; mixed border; foliage dark green; flowers purple; fruits bright red, showy in November and December; growth extremely slow; propagated from seeds; difficult to transplant. Soapbush grows well in shade or sun and should be left in place if possible when clearing for a new house.

Sotol, (*Dasylirion texanum*). Native in hill country and west of Del Rio; any soil; immune to root rot; easily transplanted. Sotol makes a large flower stalk some 10 feet high. The plants are well worth having for their tropical effect.

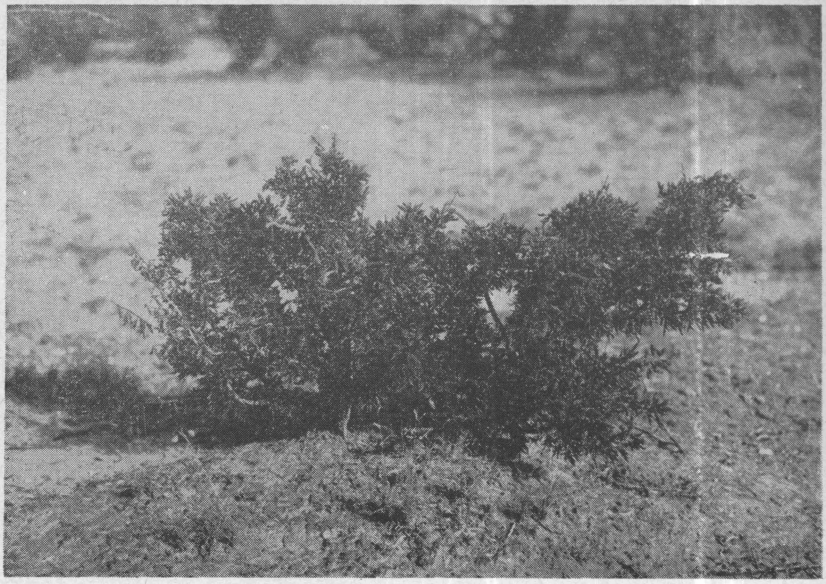


Figure 38. The soapbush, or guayacan, is a native evergreen. Courtesy Sadie Hatfield.

Switch Sorrel, (*Dodonaea triquetra*). From Australia. A rather strong-growing shrub with light green foliage and red seed capsules, which are ornamental and hang on for some time. It would be useful as a low windbreak.

Sumac, Evergreen, (*Rhus virens*). Native in West Texas and easily grown. Fruits are bright red and ornamental.

Tea Plant, Chinese, (*Sageretia theezans*). Introduced, any soil; foliage medium green; flowers not showy but intensely fragrant. This is a recent introduction that is highly recommended for shady places, but also does well in sun. It can be pruned as a shrub, or trained to cover an arbor.

Yaupon, (*Ilex vomitoria*). Native in East Texas. The most attractive ones have red berries at Christmas time. This is one of the prettiest evergreen shrubs in East Texas, and well worth growing in Southwest Texas. It is one of the few hollies that will grow here. Like all hollies, it grows rather slowly. A small native shrub called Desert Yaupon (*Schaefferia cuneifolia*) is not as attractive as the yaupon above, but is easy to obtain locally and is useful in a mixed planting. It also has red berries in the winter and is easily transplanted.

Flowering Shrubs

Although evergreens are desirable as stated, there are some deciduous species that are valuable for their showy or fragrant flowers. These are always useful for interplanting with evergreens and may even be used alone, if pretty enough. A partial list is given in Table 4, which also includes some that were listed in Table 3 because they are evergreen.

Boneset, (*Eupatorium havanense*). (Figure 39). Native in hills of Edwards Escarpment. Easily grown from cuttings and has a beautiful mass of white flowers throughout the summer.

Buckeye, Mexican, (*Ungnadia speciosa*). Native in hill country; any soil; flowers reddish purple appearing before the leaves in the spring; easily grown from seeds. The seeds are poisonous.

Chaste Tree, (*Vitex agnus-castus*). Introduced; any soil; easily grown from cuttings. If properly pruned it will make a shade tree, but normally is used as a shrub. It is attractive and easily grown. Another species more recently introduced is *Vitex negundo incisa* which has similar habits.

Crepe Myrtle, (*Lagerstroemia indica*). (Figure 40). Introduced; flowers very showy, abundant throughout the summer. Crepe

Table 3. Evergreen shrubs

Scientific name	Common name	Mature height	Size spread	Rate of growth	Resistance to		Exposure to sun	Grown from	Use
					Root rot	Cold			
Abelia grandiflora	Abelia	8	8	slow	good	hardy	full	cuttings	foundation
Acacia amentacea (N)	Black brush	12	20	moderate	good	20° F	full	seed (1)	specimen, group
Acacia berlandieri (N)	Guajillo	10	8	moderate	good	25° F	full	seed (1)	foundation, hedge
Adenocarpus foliolosus	Canary Island lupine	8	6	rapid	poor	15° F	full	seed (2)	specimen
Agave americana	Century plant	5	6	moderate	good	hardy	full	suckers	specimen
Arundo donax (N)	Carrizo	15	clumps	rapid	good	hardy	full	sprouts	screen or hedge
Baccharis neglecta (N)	Desert willow	10	5	rapid	good	hardy	full	seeds, cuttings	hedge
Bambusa spp.	Bamboo	15	15	rapid	good	15° F	full	root division	specimen, hedge
Berberis trifoliolata (N)	Agarita	3	4	moderate	good	hardy	full or part	seed, suckers	group, border (6)
Caesalpinia gilliesii (N)	Bird of Paradise	5	5	moderate	good	15° F	full	seed	specimen, group
Caesalpinia mexicana	Yellow Poinciana	10	12	moderate	good	15° F	full	seed	specimen
Callistemon spp	Bottle brush	12	10	rapid	good	18° F	full	seed	specimen
Carissa grandiflora	Natal plum	4	4	moderate	good	22° F	full	layers, cuttings	hedge, group
Castela texana (N)	Amargosa	4	3	slow	good	hardy	full	seed	specimen, hedge (6)
Citharexylum berlandieri (N)	Fiddlewood	10	10	rapid	good	20° F	full	cuttings	foundation, group
Citrus hybrids	Citrange	15	15	rapid	good	10° F	full	seed (3)	hedge, screen (6)
Citrus mitis	Calamondin	15	10	moderate	good	20° F	full	seed (3)	specimen, fruit (6)
Condalia obovata (N)	Brazil	15	12	moderate	good	hardy	full	seed (3)	specimen, group
Cortaderia argentea	Pampa grass	8	12	moderate	good	hardy	full	division	specimen, group
Cupressus arizonica	Arizona cypress	15–40	15–25	rapid	fair	hardy	full	seed	specimen, windbreak
Cupressus sempervirens var	Italian cypress	20–60	10	rapid	fair	hardy	full	seed	specimen, foundation
Dalea formosa (N)	Purple dalea	2	3	moderate	fair	hardy	full	seed, cuttings	group
Dasylirion texanum (N)	Sotol	5	6	moderate	good	hardy	full	seed	specimen
Diospyros texana (N)	Texas persimmon	15	20	moderate	good	hardy	full or part	seed	group
Dodonea triquetra	Switch sorrel	12	20	rapid	good?	hardy	full	seed	hedge (6)
Elaeagnus macrophylla (C)	Elaeagnus	8	6	slow	good	hardy	full or shade	seed (4)	group
Elaeagnus pungens (C)	Elaeagnus	6	4	slow	good	hardy	full or shade	seed (4)	group
Ephedra spp	Joint-fir	3	5	slow	good	hardy	full or shade	sprouts, layers	dry places
Erythea armata	Blue palm	6	8	slow	good	hardy	full	seed	specimen
Euphorbia pulcherrima	Poinsettia	6	14	rapid	poor	20° F	full or shade	cuttings	specimen
Euonymus japonica	Euonymus	8	6	moderate	fair	hardy	full or shade	cuttings	foundation, specimen
Eysenhardtia texana (N)	Rock brush	10	6	moderate	fair	hardy	full or part	seed	group, hedge
Fallugia paradoxa (N)	Apache plume	4	6	rapid	good	hardy	full	seed (3)	group
Feijoa sellowiana	Pineapple guava	8	10	slow	good	10° F	full	seed	foundation, specimen
Fortunella spp	Kumquat	6–15	10	slow	good	15° F	full	budded	specimen, fruit (6)
Gardenia jasminoides	Cape Jesmine	5	5	slow	fair	hardy	full or part	cuttings (5)	specimen, group

Ilex cornuta	Chinese holly	4	4	slow	good	hardy	full	cuttings (5); root-sprouts	specimen (6)
Ilex vomitoria (N)	Yaupon	12	15	moderate	good	hardy	full	seeds (4)	hedge, specimen
Juniperus pinchoti (C)	Redberry juniper	10	12	slow	good	hardy	full	seed	hedge, screen
Larrea tridentata (N)	Creosote bush	2	2	slow	good	hardy	full	transplants	specimen, group
Lawsonia inermis	Henna	4	4	moderate	good	25° F	full	seed	group
Leucophyllum frutescens (N)	Ceniza	5	4	moderate	good	hardy	full	seed	hedge, specimen
Ligustrum japonicum	Privet	8–15	10	moderate	fair	hardy	full	cuttings	group
Ligustrum walkeri	Privet	10	15	moderate	good	hardy	full	cuttings	group, hedge
Lippia ligustrina (N)	White bush	5	3	rapid	good	hardy	full or shade	cuttings	group, hedge
Melaleuca styphelioides	Bottle-brush	30	15	moderate	good	20° F	full	seed	hedge, windbreak
Musa sp. (C)	Banana	15	10	rapid	good	20° F	full	division	group, fruit
Myoporum angustifolium	Myoporum	6	10	moderate	good	18° F	full or part	cuttings	specimen
Myrtus communis	Roman myrtle	8	10	slow	good	hardy	full or part	cuttings	specimen, hedge
Nandina domestica	Nandina	5	4	moderate	good?	hardy	full or shade	seeds	specimen, group (6)
Nannorrhops ritchieana	Desert palm	8	9	moderate	good	hardy	full	division	group
Nerium oleander	Oleander	12	15	rapid	good	15° F	full	cuttings	Avenues specimen
Nicotiana glauca (N) (C)	Tree tobacco	20	15	rapid	good	hardy	full	seeds	group
Pithecolobium brevifolium (N)	Coast guajillo	15	20	moderate	good?	18° F	full or part	seed	specimen
Pittosporum tobira (C)	Pittosporum	10	15	slow	fair	hardy	full or shade	seed, cuttings	specimen
Porliera angustifolia (N)	Soap bush	8	6	slow	good	hardy	full or shade	seed	group (6)
Psidium cattleianum	Strawberry guava	4	4	moderate	good?	20° F	full	seed	hedge, fruit
Psidium guajava	Lemon guava	15	20	rapid	poor	25° F	full	seed	group, fruit
Pyracantha rogersiana	Firethorn	20	20	moderate	good	hardy	full	cuttings, seed	specimen, hedge foundation (6)
Rhus virens (N)	Evergreen sumac	10	15	moderate	good?	hardy	full	root cuttings	group
Sageretia theezans	Chinese tea plant	10	10	rapid	good	hardy	full or shade	cuttings	group, arbor, foundation
Schaefferia cuneifolia	Desert yaupon	3	3	slow	good	hardy	full or part	seed	group (6)
Severinia buxifolius	Box orange	8	10	slow	good	hardy	full	seed (3)	hedge
Sophora secundiflora (N)	Mountain laruel	10	12	slow	fair	hardy	full or part	seed	specimen, group
Stranvaesia davidiana	Stranvaesia	5	5	slow	?	hardy	full	seed, cuttings	specimen
Thuja orientalis varieties	Arbor-vitae	10–20	6–15	moderate	fair	hardy	full	seed	specimen
Xylosma flexuosa	Flacourtia	5	7	moderate	fair	hardy	full	seed	specimen (6)
Yucca treculeana (N)	Spanish dagger	10	8	moderate	good	hardy	full	seed	specimen, group
Zanthoxylum fagara (N)	Colima	10	10	moderate	good	hardy	full	seed	specimen, group

(N) Native.
(C) Not grown on Experiment Station.
(1) Pour boiling water over seeds and allow to stand over night, sow at once.
(2) Difficult to transplant.
(3) Sow as soon as ripe.
(4) Slow in germinating.
(5) Difficult.
(6) Colorful fruit.

Table 4. Flowering shrubs

Scientific name	Common name	Mature size (ft.)		Rate of growth	Resistance to		Exposure to sun	Grown from	Foliage	Flower	
		Height	Spread		Root rot	Cold				Color	Time
Abelia grandiflora	Abelia	8	8	slow	fair	hardy	full	cuttings	evergreen	pink	Mar.-Nov.
Acacia amentacea (N)	Black brush	12	20	mod.	fair	15° F	full	seed	evergreen	white	Feb.-Mar.
Acacia saligna	Wattle	12	10	rapid	fair	20° F	full	seed	evergreen	yellow	spring
Agave maculosa (N)	Snake lily	3	2	rapid	good	hardy	full, part	seed	evergreen	brownish	May
Aloe spp	Aloe	3	3	mod.	good	25° F	full	seed, suckers	evergreen	red	winter
Caesalpinia gilliesii (N)	Bird of Paradise	5	5	mod.	good	hardy	full	seed	evergreen	red	Mar.-Nov.
Caesalpinia mexicana	Yellow Poinciana	10	12	mod.	good?	18° F	full	seed	evergreen	yellow	Mar.-Nov.
Cassia spp	Golden wonder	8	8	rapid	fair	18° F	full	seed	evergreen	yellow	winter-spring
Cephalanthus occidentalis (N)	Button willow	10	12	rapid	fair	hardy	full, part	cuttings	deciduous	white	spring
Ceratostigma willmottianum	Chinese plumbago	3	3	rapid	fair?	full, part		cuttings	evergreen	blue	May-Dec.
Cercis occidentalis	Redbud	12	9	mod.	fair	hardy	full	seed	deciduous	red	Mar.
Cestrum diurnum	Day jesmine	5	5	rapid	good	20° F	full, part	seed, cuttings	evergreen	white	Mar.-Dec.
Chaenomeles japonica	Flowering quince	5	4	slow	fair	hardy	full, part	cuttings	deciduous	red	Feb.
Chamaelaucium sp	Geraldton wax flower	8	8	rapid	poor	20° F	full	seed	evergreen	white to red	continuous
Chilopsis linearis (N)	Flowering-willow	18	12	rapid	fair	hardy	full	cuttings	deciduous	pink	summer
Citrus mitis	Calamondin	15	10	mod.	good	20° F	full	seed (1)	evergreen	white (2)	continuous
Cordia boissieri (N)	Wild olive	10	12	mod.	good	20° F	full	seed, cuttings	evergreen	white	continuous
Dalea formosa (N)	Purple dalea	2	2	mod.	fair	hardy	full	seed, cuttings	evergreen	blue-purple	Mar.
Duranta repens	Skyflower	7	5	mod.	good	25° F	full, part	seed	evergreen	blue	continuous
Erythrina flabelliformis	S. W. Coral-bean	4	3	slow	good	hardy	full, part	seed	deciduous	red (2)	spring
Erythrina herbacea (N) (C)	Coral-bean	4	10	mod.	?	20° F	full	seed, cuttings	herbaceous	red (2)	spring
Eupatorium havanensis (N)	Boneset	4	7	rapid	good	hardy	full, part	cuttings	evergreen	white	continuous
Euphorbia pulcherrima (C)	Poinsettia	5	3	rapid	?	25° F	full	cuttings	evergreen	red	winter
Fallugia paradoxa (N)	Apache plume	4	5	rapid	good	hardy	full	seed (1)	evergreen	white (2)	Mar.-Nov.
Fortunella margarita	Kumquat	10	10	mod.	good	15° F	full	budding	evergreen	white (2)	May-Aug.
Fouquiera splendens	Ocotillo	10	10	slow	good	hardy	full	cuttings	deciduous	red	summer
Gardenia spp	Cape jasmine	6	5	mod.	fair	18° F	part	cuttings	evergreen	white	continuous
Hibiscus syriacus (C)	Rose of sharon	10	5	mod.	poor	hardy	full, part	cuttings	deciduous	various	summer
Jasminum primulinum	Jasmine	8	10	mod.	fair	hardy	full	cuttings, layers	evergreen	yellow	spring, summer
Lagerstroemia indica	Crepe myrtle	12	12	rapid	good	hardy	full	cuttings	deciduous	various	summer-fall
Lantana camara (N)	Lantana	3	4	rapid	fair	20° F	full, part	seed, cuttings	evergreen	orange	continuous

Lantana sellowiana	Trailing lantana	2	2	mod.	good	hardy	full	layers	evergreen	lilac	continuous
Leucophyllum frutescens	Ceniza	6	4	mod.	good	hardy	full	seed	evergreen	purple	intervals
Malvaviscus grandiflorus	Turk's cap	6	6	rapid	good	25° F	full	cuttings	evergreen	red	fall-winter
Nerium oleander	Oleander	12	15	rapid	good	18° F	full	cuttings	evergreen	various	spring-summer
Prunus persica	Dwarf peach	5	5	mod.	fair	hardy	full	seed, buds	deciduous	red	Feb.
Punica granatum nana	Dwarf pomegranate	5	6	mod.	good	hardy	full	cuttings	deciduous	red	spring-fall
Rosa spp	Roses	6	5	rapid	poor	hardy	full	budding	evergreen	various	continuous
Tamarix chinensis	Salt Cedar	8	8	mod.	good	hardy	full	cuttings	deciduous	lavender	summer-fall
Tecoma stans var. latifolia	Golden shower	8	8	rapid	good	20° F	full, part	seed	evergreen	yellows	fall
Thryallis glauca	Gold shower	3	3	mod.	fair	25° F	full	cuttings (?)	evergreen	yellow	continuous
Ungnadia speciosa	Mexican buckeye	10	12	rapid	good	hardy	full, part	seed	deciduous	red	Mar.
Vitex agnus-castus	Chaste tree	15	15	rapid	good	hardy	full	cuttings	deciduous	blue or red	spring-fall
Vitex negundo incisa	Butterfly bush	15	15	rapid	good	hardy	full	cuttings	deciduous	blue	continuous

(N) Native.
(C) Not grown on Experiment Station.
(1) Sow at once when ripe.
(2) Also colorful fruit.

myrtle may be obtained in colors ranging from white to deep purple, with various shades of red. It is highly recommended for sandy soils. It can be pruned to any size or shape.

Geraldton Wax Flower, (*Chamaelaucium uncinatum*). Introduced from Western Australia. It has various colors of flowers which are abundant and borne almost continuously. Although susceptible to root rot, it is well worth trying to grow.

Golden Shower, (*Tecoma stans* var. *latifolia*). This is native to the Trans-Pecos area and is easily grown from seed. It will freeze down each winter where temperatures go below 20° F. The mass of large yellow trumpet-like flowers is very showy in the fall and early winter.

Golden Wonder, (*Cassia artemisioides*). Introduced; any soil; flowers abundant, yellow; grayish foliage. It does not stand temperatures below 20° F., but may be grown as an annual from seed. It is very pretty in flower.

Huisache, Gulf Coast, (*Pithecolobium brevifolium*). (Figure 41). This is a very attractive evergreen with white flowers.

Lantana, Trailing, (*Lantana sellowiana*). This species of Lantana is a hardy perennial that flowers continuously with pretty lavender colored flowers. It is especially useful in beds. The native Lantana (*L. camara*) can be used in group or border plantings.

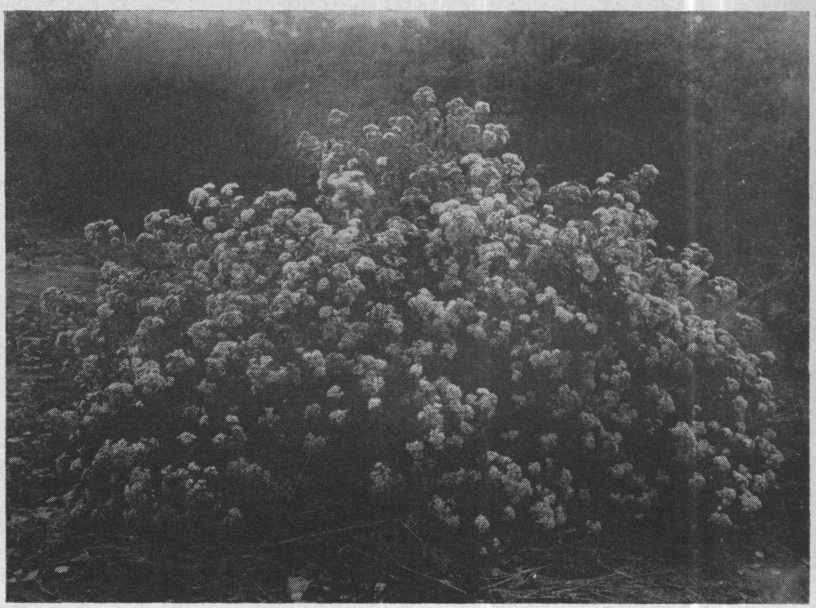


Figure 39. Boneset *(Eupatorium havanense)* in flower November 3, 1943.

Figure 40. Crepe myrtle is well adapted on sandy soils.

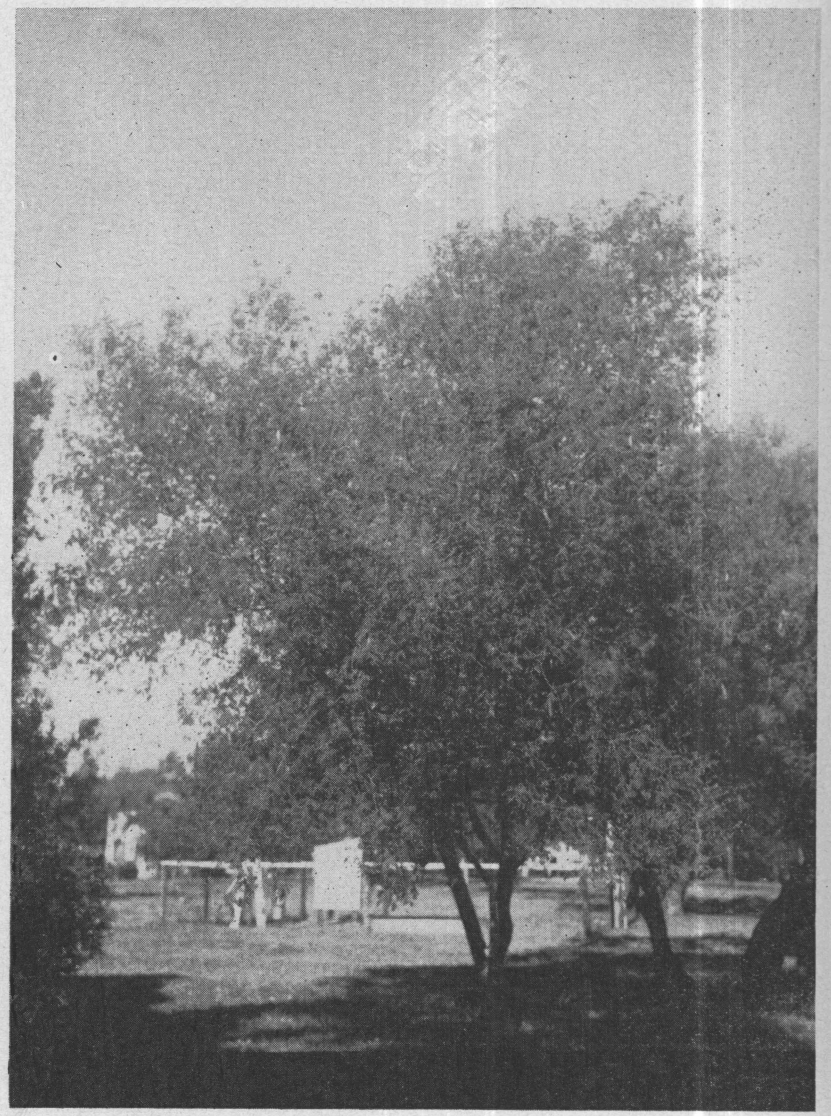


Figure 41. Gulf Coast huisache *(Pithecolobium brevifolium)* flowers frequently during the year.

Ocotillo, or Jacob's Staff, (*Fouquiera splendens*). Native west of Devil's River; any soil. The stems rise in vase-form from the ground, and are lined with stout thorns. Leaves appear only when there is abundant moisture. The flowers are at the end of the stem, red, showy. It is easily transplanted. A curious plant often used for fences in Arizona; attractive in rock gardens or background.

Peach, Dwarf (*Prunus persica*). Recently introduced; any soil. The flowers are red and showy in February and March. It should be grown either as a seedling or budded on resistant root stocks such as P. I. 61302 or Shalil. The fruit is edible, but not of very good flavor.

Plumbago, Chinese, (*Ceratostigma willmottianum*). Introduced; small, flowering shrub with abundant blue flowers. It may have to be grown from seed like an annual, as it is not long-lived. It is useful for bedding.

Pomegranate, Dwarf, (*Punica granatum nana*). Introduced; any soil. Pomegranates grow very well in this area, and are attractive shrubs in summer. This dwarf variety grows to only 2 or 3 feet and flowers profusely all through the summer and fall. The fruiting pomegranate is also useful in landscaping (Figure 42).

Figure 42. Pomegranate is root-rot-resistant and is attractive during the summer. Bamboo is at the left and mulberry in the rear.

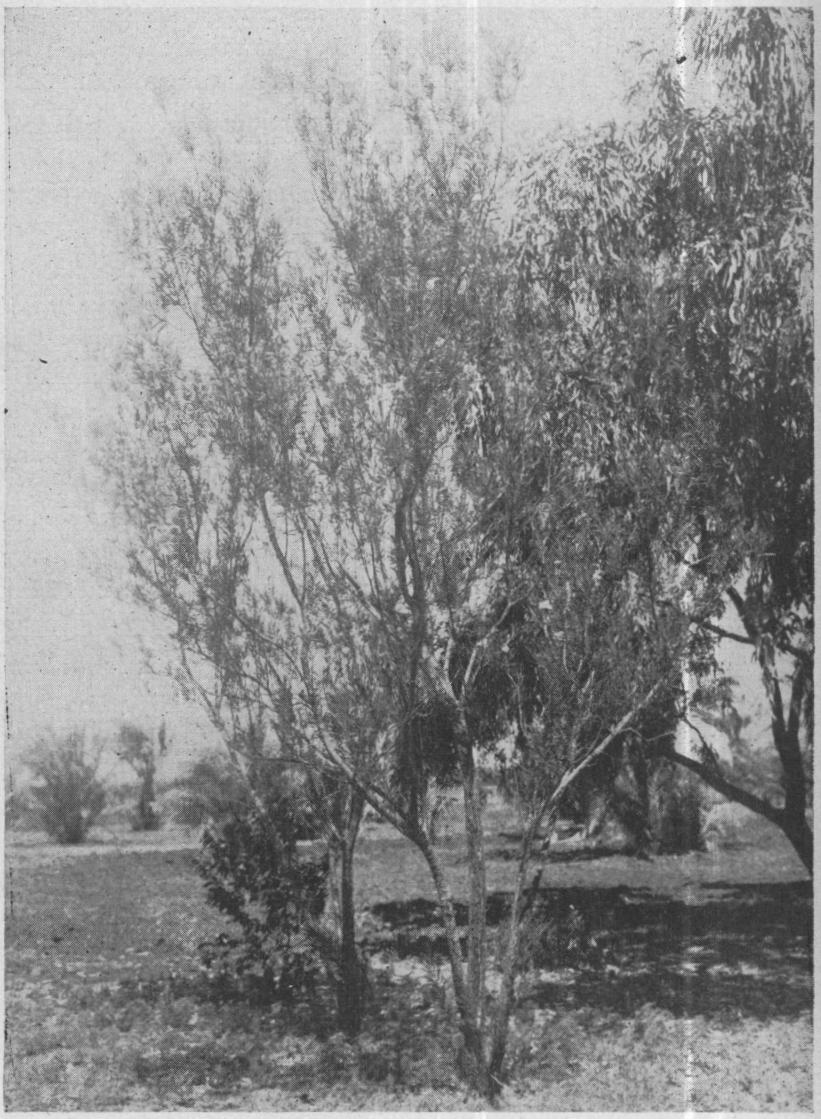


Figure 43. Flowering willow is a native shrub easily grown from cuttings that flowers almost continuously.

Redbud, (*Cercis occidentalis*). Native; any soil. The flowers are purplish red, appearing before the leaves in early spring. The foliage is glossy green.

Roses (*Rosa* spp.) are easily grown in sandy soils, but considerable trouble with chlorosis is experienced on heavy, limy soils. Roses in this area tend to bloom almost continuously and will not live very long. The safest varieties are Red Radiance, E. G. Hill, Etoile de Hollande (red); Briarcliffe, Editor McFarland, Edith Nellie Perkins, Texas Centennial (pink or light red); Luxembourg, President Herbert Hoover, Talisman (yellow or orange); Caledonia and Kaiserin Augusta Viktoria (white). For a full discussion of rose growing, consult Texas Experiment Station Circular No. 90 (5).

Russian Olive, (*Elaeagnus angustifolia*). Introduced; any soil; foliage gray. A deciduous flowering shrub with good foliage.

Salt Cedar, (*Tamarix chinensis*). Introduced from Turkistan. The flowers appear during the summer in large loose panicles at the tips of the branches, and are a beautiful reddish purple. The form grown at the Winter Garden station is propagated from cuttings, and seldom exceeds 4 feet in height.

Turk's Cap, (*Malvaviscus grandiflorus*). A tropical plant with showy red flowers from March to December. Easily grown from cuttings. It stands shade well, and can be pruned to shape.

Wattle, (*Acacia saligna*). Introduced from Western Australia. A shrub or small tree with drooping branches and showy yellow flowers in racemes in late winter and early spring. It is sensitive to root-knot nematodes, but grows quickly, therefore, is easily replaced.

Willow, Flowering, (*Chilopsis linearis*). (Figure 43). Native along river beds; any soil; flowers showy, abundant. This plant is large and requires more room than most, but the flowers are worth it if one has the room available. It is easily grown from cuttings.

Vines

In many cases it is not practical to grow a tree to shade certain areas, such as the west side of dwellings, and sometimes a quick coverage is needed. In cases like these, vines are useful. They provide cover and are very helpful to cover arbors for use as outdoor living rooms.

Alamo Vine, (*Operculina dissecta*). Native; any soil; rapid growth; tall climbing; evergreen; flowers tubular, white with red centers in the fall; easily grown from seeds; well adapted and commonly grown.

Table 5. Ornamental vines

Scientific name	Common name	Height feet	Rate of growth	Reistance to		Grown from	Flower	
				Root rot	Cold		Color	Time
Antigonon leptopus	Queen's wreath	15	rapid	good	30° F	seed, tubers	pink	fall (1)
Bignonia unguis-cati	Trumpet vine	10	moderate	good	hardy	layers	yellow	Mar.-April
Bougainvillea spectabilis	Bougainvillea	15	rapid	good	25° F	cuttings	purple	continuous
Cissus incisa (N)	Yerba del Buey	15	rapid	good	30° F	tubers	greenish	summer (1)
Clematis texensis (N)	Leather flower	20	moderate	good	hardy	seed	red	fall
Cocculos carolinus (N)	Snailseed	10	moderate	good	hardy	seed	red fruits	fall
Cryptostegia grandiflora		15	rapid	good	25° F	seed	purple	continuous (1)
Gelsemium sempervirens (C)	Carolina jasmine	15	rapid	poor	12° F	seed	yellow	spring
Ipomoea cairica		12	rapid		hardy	seed, layer	lavender	continuous
Ipomoea tuba	Moonflower	15	rapid	fair	15° F	seed, layer	white	fall (1)
Lonicera halliana (C)	Hall's honeysuckle	15	rapid	fair	hardy	cuttings	yellow	continuous
Operculina dissecta (N)	Alamo vine	15	moderate	good	15° F	seed	white	summer-fall
Parthenocissus quinquefolia (C)	Virginia creeper	20	rapid	poor	hardy	seed	greenish	(2)
Pueraria hirsuta	Kudzu	40	rapid	fair	20° F	seed, layers	purple	fall (1)
Rosa sp	Climbing rose	15	moderate	poor	hardy	budding	various	winter-spring
Trachelospermum jasmonoides (C)	Confederate jasmine	20	moderate		15° F	cuttings	white	spring-summer
Vitis berlandieri (N)	Winter grape	20	moderate	good	hardy	cuttings	white	spring (2)
Vitis candicans (N)	Mustang grape	30	rapid	good	hardy	seed, cuttings	white	spring (2)
Vitis champini (N)	Dog Ridge grape	20	moderate	good	hardy	cuttings	white	spring (2)
Wisteria spp	Wisteria	25	moderate	fair	hardy	seed, layers	various	spring (2)

(C) Not grown on Experiment Station.
(N) Native.
(1) Freezes down each winter; comes out in spring.
(2) Deciduous.

Bougainvillea, (*Bougainvillea spectabilis*). A tropical vine or shrub with showy purple flowers borne continuously. Useful only in the southern part of the area because it is tender below 25° F. There are also varieties with crimson or white flowers.

Grapes, (*Vitis* spp.). Only native vines of mustang (*V. candicans*), canyon grape, (*V. berlandieri*), or LaPryor, Champanel, or Dog Ridge (*V. champini*), grapes are recommended as resistant to root rot. Of these, only Champanel produces much fruit. If fruiting varieties are desired they should be grafted on one of the above. Leafhoppers cause some trouble in the late summer and fall. Grapes give quick summer shade and may at the same time produce fruit.

Kudzu, (*Pueraria thunbergii*). Introduced; any soil; very rapid growth; deciduous; flowers in purple panicles, summer and fall; grown from seeds or rooted shoots. This is the quickest growing vine the Winter Garden station has tried. It is highly recommended for an arbor or trellis.

Queen's Wreath, (*Antigonon leptopus*). (Figure 28). Native to Mexico; any soil; rapid growth; freezes to ground each winter; flowers red or pink, profuse throughout summer and fall; grows from underground tuber; also from seeds. The showiest and most desirable vine that can be grown here.

Roses, Climbing, (*Rosa* spp.). There is a wide choice in climbing roses which do especially well in sandy soils in this area. A very hardy variety is the Dr. W. Van Fleet, a light pink rose that blooms only in the spring. Climbing varieties are available that bloom continuously. It will be difficult to grow these on very heavy limy soils.

Yerba del Buey, (*Cissus incisa*). Native; any soil; freezes to ground each winter; rapid growth; dense dark green foliage; grows from large tuber underground; will climb about 10 feet. It clings well to stucco or brick walls.

Annual Vines. There are many annual vines that can be used temporarily, and must be planted from seed each year. Some of the best ones are cypress vine, balsam vine, morning glory, "caracola" or snailvine, and "tulipan."

Bulbs

Some of the most satisfactory of all flowering plants are those propagated from bulbs, tubers or roots. They grow more quickly and have showy flowers for cutting. Some are potted and grown indoors, but in this mild climate most can be grown easily outdoors (3). The more commonly grown bulbs in the Winter Garden area

Table 6. Bulbs, tubers and roots

Scientific name	Common name	Approx. height, feet	Sun exposure	Season to plant	Flowers color	Season	Soil moisture	Origin
Agapanthus africanus (C)	Lily-of-the-Nile	3	any	Jan.-Mar.	blue	summer	much	South Africa
Allium cernuum (N)	Rose fl. onion	2	any	fall	rose	spring	plenty	Native
Alstroemeria spp. (C)	Alstroemeria	2–4	shade	fall	various	spring	plenty	South America
Amaryllis belladonna (C)	Belladonna lily	2	any	fall or winter	rose	summer	moderate	South Africa
Anemone coronaria (C)	Poppy anemone	1	any	fall-winter	various	spring	moderate	Medit. Region
Babiana pygmaea (C)	Baby gladiolus	1	full	fall	various	spring	moderate	South Africa
Bessera eleganz (C)	Coral drops	2	full	spring	red	fall	moderate	Mexico
Brodiaea coronaria (C)	Harvest Brodiaea	1	any	fall	blue	late spring	moderate	California
Brodiaea ixioides (C)	Pretty face	1	any	fall	yellow	spring	moderate	California
Calochortus kennedyi (C)	Mariposa lily	1	full	fall	yellow	spring	light	Arizona
Calochortus barbatus (C)	Mexican Mariposa	1	full	spring	yellow	early summer	light	Mexico
Canna spp	Canna	4	full	spring	various	summer-fall	plenty	Cult.
Colocasia esculentum	Elephant ear	2	full	spring	(foliage	plant)	moderate	Asia
Crinum amabile (C)	Angel lily	4	any	spring	pink	summer-fall	moderate	Sumatra
Crinum fimbriatulum	Angel lily	2	any	spring	pink	summer-fall	moderate	Angola
Crinum longifolium	Angel lily		any	fall	white	spring	moderate	South Africa
Crocus sp. (C)	Crocus		any	fall	various	winter-spring	moderate	Asia Minor
Dahlia spp	Dahlia	4	any	spring	various	fall	plenty	Asia
Eucharis grandiflora (amazonica) (C)	Amazon lily	2	shade	spring	white	often	plenty	Colombia
Freesia spp. (C)	Freesia	1	full	fall	various	spring	plenty	South Africa
Fritillaria lauciolata (C)	Mission bells	2	part shade	fall	mottled	spring	moderate	California
Fritillaria recurva (C)	Red bells	2	part shade	fall	red	spring	moderate	California
Galtonia candicans (C)	Summer hyacinth	4	any	fall-winter	white	spring	plenty	South Africa
Gladiolus spp	Gladiolus	3	full	fall-winter	various	spring-summer	plenty	South Africa
Gloriosa rothschildiana (C)	Glory lily	vine	part shade	spring	various			Trop. Africa
Hemerocallis spp	Day lily	1	part shade	fall	yell-orange	spring	moderate	Asia
Hippeastrum vittatum	Amaryllis	1	full	fall	various	spring	moderate	Peru
Iris germanica	Bearded iris	2	any	fall	various	winter-spring	moderate	Medit.
Iris xiphium	Dutch iris	2	full	fall-winter	various	winter-spring	moderate	Medit.
Ixia spp. (C)	Ixia	2	full	fall	various	spring	moderate	South Africa
Kniphofia uvaria	Torch-lily	3	part shade	any	red	summer	moderate	South Africa
Leucocoryne ixioides (C)	Glory of the Sun	1	full	fall	blue	spring	moderate	Chile
Lilium candidum (C)	Madonna lily	4	full	Sept.-Oct.	white	spring	moderate	Persia
Lilium longiflorum vars. (C)	Easter lily	3	part shade	fall	white	spring	moderate	
Lilium pardalinum (C)	Leopard lily	8	part shade	fall	spotted	spring	plenty	California
Lilium regale (C)	Regal lily	5	part shade	fall	white	spring	plenty	W. China
Manfreda maculosa (N)	Snake-lily	3	any	fall	brownish	spring	moderate	Native
Milla biflora (C)	Estrellita	1		spring	white	July-Sept.	moderate	Mexico
Moraea iridioides (C)	Natal-lily	2	any	fall	white	July-Sept.	plenty	South Africa

Muscari botryoides (C)	Grape hyacinth	1	full	fall	blue	spring	moderate	Medit.
Narcissus spp	Daffodil, Narcissus, *Jonquil*	2	any	fall-winter	various	winter-spring	moderate	Medit.
Ornithogalum umbellatum	Star-of-Bethlehem	2	any	fall	white	spring-summer	moderate	Medit.
Polianthes tuberose	Tuberose	3	full	fall	white	winter-spring	moderate	Mexico
Schizostylis coccinea (C)	Kafir-lily	2		Feb.	red	summer	moderate	
Sparaxis grandiflora (C)	Wand-flower	1	full	fall	various	spring	moderate	South Africa
Sprekelia formosissima (C)	Aztec-lily	1	full	winter	red	spring	moderate	Mexico
Strelitzia reginae (C)	Bird of Paradise	3	full	any	orange	continuous	plenty	South Africa
Tigridia pavonia (C)	Tiger-flower	2	full	Jan.-Mar.	various	early summer	plenty	Mexico
Tritonia (*Montbretia*) *crocata* (C)	Montbretia	3	part shade	fall	red-orange	spring-summer	moderate	South Africa
Vallota speciosa (*purpurea*) (C)	Searborough-lily	2	full	fall	red	summer	plenty	South Africa
Veltheimia viridifolia (C)		1	full	fall	red	winter	moderate	South Africa
Watsonia spp		4	part shade	fall	various	summer	moderate	South Africa
Zantedeschia spp. (C)	Calla-lily	2	shade	any	white	any	plenty	South Africa
Zephyranthas rosea	Zephyr-lily	1	full	fall	rose	spring	moderate	

(N) Native.
(C) Not grown on Experiment Station but apparently adapted.

are Belladonna lily (*Amaryllis belladonna*), Canna, Angel lily, (*Crinum*), Dahlia, Gladiolus, bearded iris (7), Dutch iris, lilies, narcissus, Star of Bethlehem (*Ornithogalum*) and tuberose (*Polianthes*). Some of these are also grown commercially for cut flowers.

Herbaceous Plants Grown from Seed

Practically all of this group are annuals in the Winter Garden area because of high summer temperatures that are unfavorable to perennial growth. As will be noted in Table 7, most of them should be planted in the fall. Many will be found in any catalog specializing in flower seeds. A few of the more recent introductions will be listed only by seedsmen specializing in plants not commonly cultivated. Of course, one can always collect his own seed from the native varieties.

The more commonly planted sorts can be grouped as follows for convenience:

Spring flowers: Ageratum, hollyhock, snapdragon, *Antirrhinum,* pot marigold, *Calendula,* corn flower, *Centaurea,* larkspur, carnation, California poppy, candytuft, sweet pea, bluebonnet, oriental poppy, petunia, phlox, sage, verbena, violet and pansy.

Figure 44. Lawn grass test plots at the Winter Garden station.

Table 7. Herbaceous plants grown from seed

Scientific name	Common name	Planting		Flowers		Height average inches	Use	Exposure to sun	Origin
		Time	Method	Time	Color				
Abronia umbellata vars. (C)	Sand-verbena	fall	direct	spring	pink	6	bed	full	California
Achillea spp	Yarrow	fall	direct	summer	yel. & white	15	bed	full	Europe
Ageratum houstonianum	Ageratum	fall	direct	spring	blue	12	bed	full	Mexico
Althea rosea	Hollyhock	fall	direct	spring	various	72	spec.	full	China
Amaranthus caudatus	Love-lies-bleeding	spring	direct	summer	red	40	back	full	Tropics
Amblyolepis setigera (N)	Honey daisy	fall	direct	spring	yellow	24	spec.	full	Native
Antirrhinum majus	Snapdragon	fall	direct	spring	various	30	cut	full	Medit.
Aphanostephus humilis (N)	Pink & white daisy	fall	direct	spring	pink-white	20	bed-cut	full	Native
Arctotis stoechadifolia var. grandis (C)	African daisy	fall	direct	spring	blue-white	24	cut	full	S. Africa
Argemone spp. (N)	Prickly poppy	fall	direct	spring	red-white	36	bed	full	Native
Asclepias curassavica (C)	Brazilian butterfly	spring	direct	spring	red orange	30	cut	full-part	Tropics
Asparagus plumosus	Asparagus fern	spring	flat	winter	red berries	72	cut	full-part	S. Africa
Baptisia bracteata (N)	Wild indigo	winter	direct	spring	yellow	15	border	full	Texas
Begonia semperflorens (C)	Everblooming begonia	spring	direct	continuous	various	12	bed	half	Brazil
Boltonia latisquama	Boltons' aster	fall	direct	spring	various	36	border	full	U. S.
Calendula officinalis	Pot-marigold	fall	direct	spring	yellow	15	cut	full	S. Europe
Callirhoe involucrata (N)	Wine cup	fall	direct	spring	purple	10	bed	full	Texas
Capsicum frutescens vars. (N)	Chiliquin	spring	direct	summer	red fruits	30	spec.	full	Texas
Celosia argentea var. cristata	Coxcomb	spring	direct	summer	red	36	spec.	full	Tropics
Centaurea cyanus	Cornflower	fall	direct	spring	various	30	bed-cut	full	S. E. Europe
Centaurea moschata	Sweet sultan	fall	direct	spring	various	24	cur	full	Orient
Centrosema virginianum (N)	Gulf coast pea	spring	direct	summer	purple	.....	trellis	full	Texas
Chrysanthemum carinatum	Annual chrys	spring	direct	summer	various	36	cut	full	Morocco
Chrysanthemum	Crown daisy	spring	direct	fall	various	36	cut	full	Medit.
Chrysanthemum maximum	Shasta daisy	fall	direct	spring	white	30	cut	full	Pyrenees
Cleome spinosa (C)	Spider-flower	spring	direct	summer	pink	48	border	full	Tropics
Coleus hybrids	Flame nettle	spring	direct	summer	blue	15	foliage	full	Tropics
Coreopsis grandiflora (N)	Coreopsis	fall	direct	spring	yellow	28	cut	full	Texas
Coreopsis tinctoria (N)	Calliopsis	fall	direct	spring	brown-yel.	30	cut	full	Native
Cosmos spp	Cosmos	summer	direct	summer-fall	various	60	border	full	Mexico
Crotalaria spectabilis	Golden sweet pea	spring-summer	direct	summer-fall	yellow	48	border	full	India
Cynoglossum amabile (C)	Chinese forget-me-not	fall	direct	spring	various	20	bedding	full	E. Asia
Daucus carota (N)	Queen Anne's lace	spring	direct	summer	white	18	cut-border	full	Texas
Delphinium ajacis	Larkspur	fall	direct	spring	various	30	bed	full	S. Europe
Dianthus barbatus	Sweet william	fall	direct	spring	various	24	bed	full	S. Europe
Dianthus caryophyllus	Carnation	fall	flat	spring-fall	various	24	cut	full	S. Europe
Dolichos lignosus (C)	Australian pea	spring	direct	summer-fall	purple	.....	trellis	full	Australia
Dyckia spp. (C)	Dyckia	spring	flat	fall	orange-yel.	24	spec.	full	Brazil

Table 7. Herbaceous plants grown from seed—(Continued)

Scientific name	Common name	Planting		Flowers		Height average inches	Use	Exposure to sun	Origin
		Time	Method	Time	Color				
Echinops sphaerocephalus (C)	Giant globe thistle	fall	direct	spring-summer	white	70	spec.	full	N. Africa
Erysimum (Cheiranthus) linifolium (C)	Spanish wall-flower	fall	direct	spring	lavender	12	bed	full	Spain
Eschscholzia californica	California poppy	fall	direct	spring	yellow	12	bed	full	Arizona
Euphorbia heterophylla (N)	Wild poinsettia	any	direct	summer	red	24	border	full-part	Mexico
Felicia amelloides (Agathea) (C)	Blue Marguerite	fall	direct	spring	blue	24	cut	full	S. Africa
Froelichia drummondii (N)	Snake-cotton	fall	direct	spring	white	50	border	full	Native
Gaillardia pulchella (N)	Indian fire-wheel	fall	direct	spring	red	30	cut-border	full	Native
Gazania spp. (C)	Gazania	winter	flat	summer	various	9	bed-cut	full	S. Africa
Gerberia jamesoni (C)	Transvaal daisy	winter	flat	spring	various	18	cut	full	Transvaal
Gypsophila elegans	Baby's-breath	fall	direct	spring	white-pink	24	cut	full	Caucasus
Helianthus debilis var. cucumerifolius (N)	Miniature sunflower	spring	direct	summer	yellow	48	cut	full	Native
Helichrysum bractiatum (C)	Strawflower	spring	direct	spring-summer	various	36	cut	full	Australia
Helipterum manglesii (Rhodanthe) (C)	Swan river everlasting	spring	direct	spring	various	18	cur	full	Australia
Helipterum rosei (Acroclinium) (C)	Strawflower	spring	direct	spring	various	24	cut	full	Australia
Hibiscus spp. (N)	Rose-mallow	spring	direct	summer-fall	various	30–90	back	full	Native
Hunnemannia fumariaefolia	Tulip-poppy	fall	direct	spring	yellow	24	bed	full	Mexico
Iberis umbellata	Candytuft	fall	direct	spring	various	16	bed	full	S. Europe
Iberis gibraltarica	Gibraltar candytuft	fall	direct	spring	lilac	15	bed	full	Spain
Impatiens balsamina	Balsam	spring	direct	spring	various	18	bed	full-part	Trop. Asia
Ipomoea spp	Morning glory	spring	direct	summer-fall	various	vine	screen	full	Tropics
Kochia scoparia	Summer cypress	spring	direct	summer-fall	foliage	30	border	full	Europe
Lathyrus odoratus	Sweet pea	fall	direct	spring	various	25–60	vut	full	Italy
Limonium sinuata (Statice) (C)	Sea lavender	fall	direct	spring	various	24	cut	full	Medit.
Linaria maroccana (C)	Little snapdragon	spring	direct	spring	various	12	bed	full	Morocco
Lindheimera texana (N)	Star-cup	fall	direct	spring-summer	yellow	24	cut	full	Native
Linum grandiflorum	Flowering flax	fall	direct	spring	various	24	bed	full	N. Africa
Linum perenne	Perennial flax	fall	direct	spring	blue	24	bed	full	Europe
Lupinus texensis (N)	Bluebonnet	fall	direct	spring	blue	18	bed	full	Native
Mathiola incana (C)	Ten weeks stock	fall	direct	spring	various	15	bed	full	S. Europe
Matricaria sp. (C)	Feverfew	fall	direct	spring	yellow	12	bed	full	Medit.
Mirabilis jalapa	Four o'clock	spring	direct	summer-fall	various	30	border	full	Mexico
Monarda spp. (N)	Horse-mint	spring	direct	spring-summer	various	30	border	any	Native
Nolana lanceolata (C)	Nolana	spring	direct	spring	blue	5	cover	full	Chile
Oenothera spp. (N)	Evening primrose	fall	direct	spring	various	20	bed	full	Native
Papaver orientale	Oriental poppy	fall	direct	spring	red	36	bed	full	Medit.
Pelargonium spp	Geranium	winter	flat	summer-fall	various	24	spec.	full	S. Africa

Penstemon heterophyllus (C)	Beard-tongue	fall	direct	spring	blue	20	bed	full	California
Penstemon hartwegii (C)	Beard-tongue	fall	direct	spring	various	30	border	full	Mexico
Petunia hybrida	Petunia	fall	direct	spring	various	18	bed	full	Argentina
Phlox drummondii (N)	Phlox	fall	direct	spring	various	12	bed	full	Native
Plumbago capensis	Plumbago	any	flat	continuous	blue	30	bed	part	S. Africa
Polypteris texana (N)	Polypteris	any	direct	spring-fall	red	18	bed	full	Native
Portulaca grandiflora	Moss rose	spring*	direct	spring-summer	various	6	bed	full	Brazil
Phaseolus caracalla	Snail-flower, "Caracola"	spring	direct	continuous	blue	vine	trellis	full	Tropics
Phaseolus coccineus	Scarlet runner	spring	direct	continuous	red-w.	vine	trellis	full	Tropics
Reseda odorata	Mignonette	fall	direct	spring	yel.-w.	12	cut	full	N. Africa
Ricinus communis	Castor-bean	spring	direct	summer-fall	foliage	120	border	full	Tropics
Rivina humilis (N)	Rouge-plant	spring	direct	fall	red fruits	20	bed	shade	Native
Rudbeckia spp. (N)	Coneflower	fall	direct	spring-summer	yel.-brown	30	cut	full	Native
Ruellia spp. (N)	Wild petunia	fall	direct	spring	blue-purple	15	bed	full	Native
Salvia spp. (N)	Sage	fall-spr.	direct	spring	blue-red	24	bed	full	Native
Scabiosa spp	Pincushion-flower	fall	direct	spring	various	24	cut	full	Caucasus
Stokesia laevis (C)	Stokes aster	fall	direct	spring	blue	18	cut	full	Louisiana
Tagetes erecta	African marigold	fall	direct	continuous	yel.-or.	30	back-cut	full	Mexico
Tagetes patula	French marigold	fall	direct	continuous	yel.-red	30	back-cut	full	Mexico
Tagetes tenuiflia (signata)	Mexican marigold	fall	direct	continuous	yellow	12	border	full	Mexico
Tithonia rotundifolia (Speciosa)	Mexican sunflower	spring	direct	summer	orange-red	60	cut	full	Mexico
Tropaeolum majus	Nasturtium	fall	direct	winter-spring	various	var.	bed-cut	full	S. America
Ursinia spp. (C)	Ursinia	fall	direct	spring	yellow	12	bed	full	S. Africa
Venidium fastuosum (C)	Monarch daisy	fall	direct	continuous	yellow	20	cut	fall	S. Africa
Verbena hortensis (N)	Verbena	fall	direct	spring	various	8	bed	full	Texas
Vernonia flexuosa (C)	Ironweed	spring	direct	spring	blue	15	border	full	Uruguay
Vinca rosea	Periwinkle	spring	direct	continuous	various	12	bed	full-part	Tropics
Viola odorata	Violet	fall	flat	spring	blue	6	bed	shade	Africa
Viola tricolor	Pansy	fall	flat	spring	various	6	border	half-shade	
Xanthisma texanum (N)	Sleepy daisy	fall	direct	spring	yellow	15	border	full	Native
Zinnia elegans	Zinnia	spring	direct	continuous	various	30	bed-cut	full	Mexico

(N) Native.
(C) Not grown on the Experiment Station but apparently adapted.

Summer flowers: coxcomb, *Celosia,* annual chrysanthemum, Queen Anne's lace, cosmos, Crotalaria, sunflower, rose-mallow, morning glory, four o'clock, geranium *Pelargonium* and Zinnia.

Fall flowers: Chrysanthemum, cosmos, marigold, periwinkle and zinnia. In the fall, the native rouge plant (*Rivina humilis*), is especially showy with its clusters of bright red fruits.

Nasturtiums bloom in the winter and early spring.

Lawns

There are only a few grasses useful for lawns in the Southwest Texas area (Figure 44). The outstanding one is St. Augustine (*Stenotaphrum secundatum*), which is often erroneously called carpet grass. This grass is at home on any soil type, and thrives in either sun or shade (Figure 16). It makes no seed and can be grown only from rooted cuttings, or divisions which are usually set in the spring about 12 inches apart each way. Most of the South Texas nurserymen have this grass available.

Centipede grass is useful on sandy soils, but should not be planted on heavy soils.

Bermuda grass is universally used because it is easily available. It requires frequent mowing for an attractive lawn and does not endure shade or heavy traffic. Bermuda grass also is a troublesome weed, whereas St. Augustine and Centipede cause no trouble in this respect.

A grass new to South Texas, *Zoysia matrella,* is creating considerable interest. It is a fine-leaved grass of velvety appearance that requires practically no mowing, but is rather expensive to plant at present since it can only be grown from pieces of sod.

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